

INQUIRY INTO HEAVY VEHICLE SAFETY AND USE OF TECHNOLOGY TO IMPROVE ROAD SAFETY

SUBMISSION TO THE NSW JOINT STANDING COMMITTEE
ON ROAD SAFETY (STAYSAFE COMMITTEE)

FEBRUARY 2018



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BACKGROUND

In October 2017, Hon. Melinda Pavey MP, NSW Minister for Roads, Maritime and Freight requested that the Joint Standing Committee on Road Safety (Staysafe Committee) inquire into and report on heavy vehicle safety and the potential for technology to improve road safety.

This submission provides a blueprint for the introduction of mandatory telematics in heavy vehicles – a position consistent with longstanding ALC policy.



RECOMMENDATIONS

1. To improve safety outcomes, the Heavy Vehicle National Law (HVNL) should require heavy vehicles to carry telematics equipment.
2. Relevant legislation (including the HVNL) should set out:
 - a. what information should be recorded; and
 - b. the circumstances where enforcement and other officers can access information
3. The HVNL should be identified as the law regulating telematics in heavy vehicles.¹
4. The HVNL should be accordingly be amended to:
 - a. allow the making of some form of legislative instrument that contains:
 - i. something like the Data Dictionary currently maintained by Transport Certification Australia (TCA), that can be amended from time to time as recording requirements for either safety or other purposes are subsequently added by other Australian laws, so there is a common set of data definitions to facilitate the collection, exchange and use of data and information; and
 - ii. privacy standards that must be met by those eligible to access the personal and business information of a transport operator.
 - b. allow amendments to primary legislation so that:
 - i. road transport operators are required to use software or hardware applications certified by the vendor as satisfying Data Dictionary standards and to maintain data as required by an Australian law;
 - ii. an offence of falsely representing that a software or hardware application satisfies a particular statutory requirement could also be created against a vendor if trade practice laws relating to the making of false and misleading claims are considered insufficient;
 - iii. if considered necessary, a capacity to prescribe an industry standard that must be met to maintain recorded data; and
 - iv. offences are created to penalise activities such as tampering with either hardware or data.

¹ For completeness, heavy vehicles are regulated using the applied legislation model. NSW is one of those jurisdictions participating in the relevant national scheme and so generally applies the *Heavy Vehicle National Law (Queensland)*: www.legislation.qld.gov.au/view/whole/html/inforce/current/act-2012-hvnlq. Jurisdictions not participating in the national scheme (WA and NT) would need to enact 'mirror' laws if they were to participate.

ALC BLUEPRINT FOR THE INTRODUCTION OF MANDATORY TELEMATICS

1

The *Heavy Vehicle National Law* is amended to require heavy vehicles to carry telematics equipment.

2

Legislation (including the HVNL) sets out:

1. What information should be recorded; and
2. The circumstances where enforcement officers and other officers can access the information.

3

The HVNL be identified as the law regulating telematics in heavy vehicles.

4

The HVNL be accordingly amended to:

- a. allow the making of a legislative instrument that contains a:
 - i. data dictionary; and
 - ii. privacy standards.
- b. Allow amendments to primary legislation so that:
 - i. road transport operators are required to use a software or hardware application certified by a vendor that satisfy data dictionary standards.
 - ii. an offence is created for falsely representing that a software or hardware application satisfies a particular standard.
 - iii. if considered necessary, a capacity to prescribe an industry standard that must be met to maintain recorded data; and
 - iv. offences are created to penalise activities such as tampering with hardware or data.



INTRODUCTION

The Australian Logistics Council (ALC) is pleased to make a submission to the Inquiry into Heavy Vehicle Safety and Use of Technology to Improve Road Safety (the Inquiry).

ALC is the peak national body representing the major and national companies participating in the freight logistics industry, with a focus on national supply chain efficiency and safety.

ALC takes a keen interest in reducing the number of fatal heavy vehicle crashes and strongly believes that technology can play a significant role in improving heavy vehicle safety.

HEAVY VEHICLE SAFETY IN AUSTRALIA

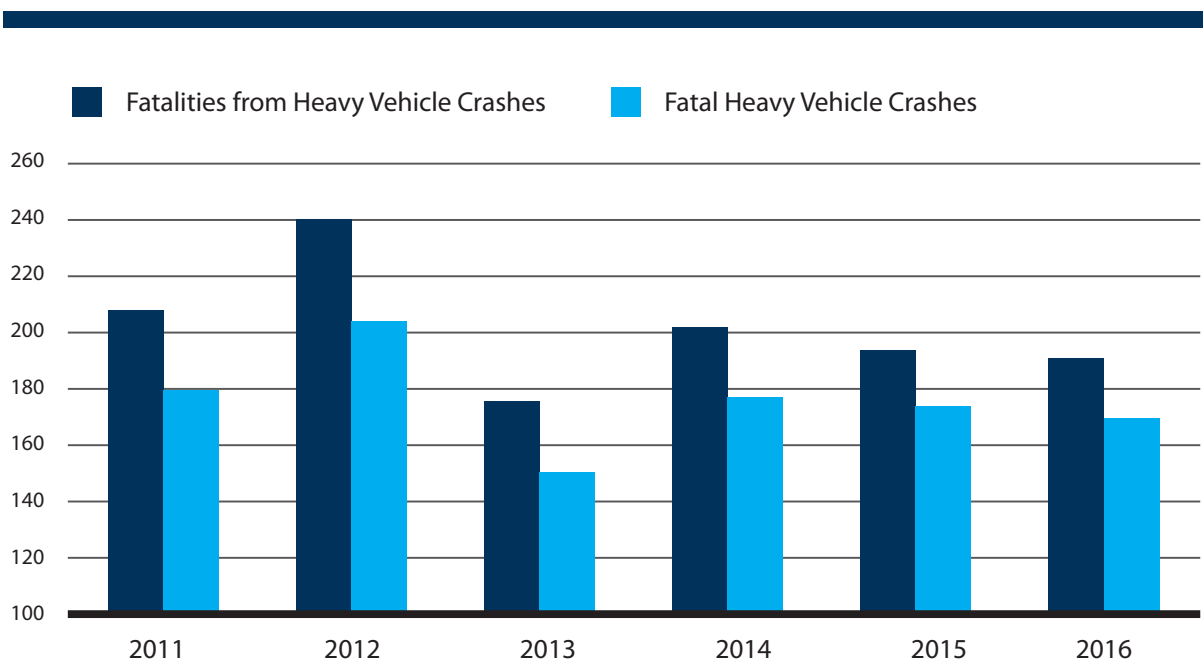
The Bureau of Infrastructure, Transport and Regional Economics (BITRE) compiles quarterly statistics on the number of fatalities and fatal crashes involving a heavy vehicle. BITRE defines a 'heavy vehicle' as an articulated truck, a heavy rigid truck, or a bus.

Before discussing this data, it is pertinent to note that in between 80 to 85 % of accidents involving a heavy vehicle, the heavy vehicle driver is found to not be at fault.² Indeed, last year it was estimated that, in 93% of accidents involving a heavy vehicle that cause a fatality, the heavy vehicle driver is found not to be at fault.³

Figure 1 below shows the number of fatalities and fatal crashes involving an articulated truck or heavy rigid truck in Australia from 2011 to 2016.

In 2016 there were **190 fatalities** from **169 fatal heavy vehicle crashes** in Australia

Figure 1: Fatalities and Fatal Crashes from Heavy Vehicles in Australia (2011 - 2016).



2 In 2011 National Transport Insurance (NTI) found that cars were at fault in 82 per cent of fatal accident involving a truck. See www.nti.com.au/media/news-article/cars-at-fault-in-82-of-fatal-crashes-with-trucks-report.php.

3 NTI, 2017 Major Accident Investigation Report: 5. See www.nti.com.au/files/files/20147_NTARC_Report/B524_NTI_2017_Accident_Investigation_Report_Web.PDF



HEAVY VEHICLE SAFETY IN NEW SOUTH WALES

Figure 2 below shows the number of fatalities and fatal crashes involving a heavy vehicle in New South Wales between 2011 and 2016.

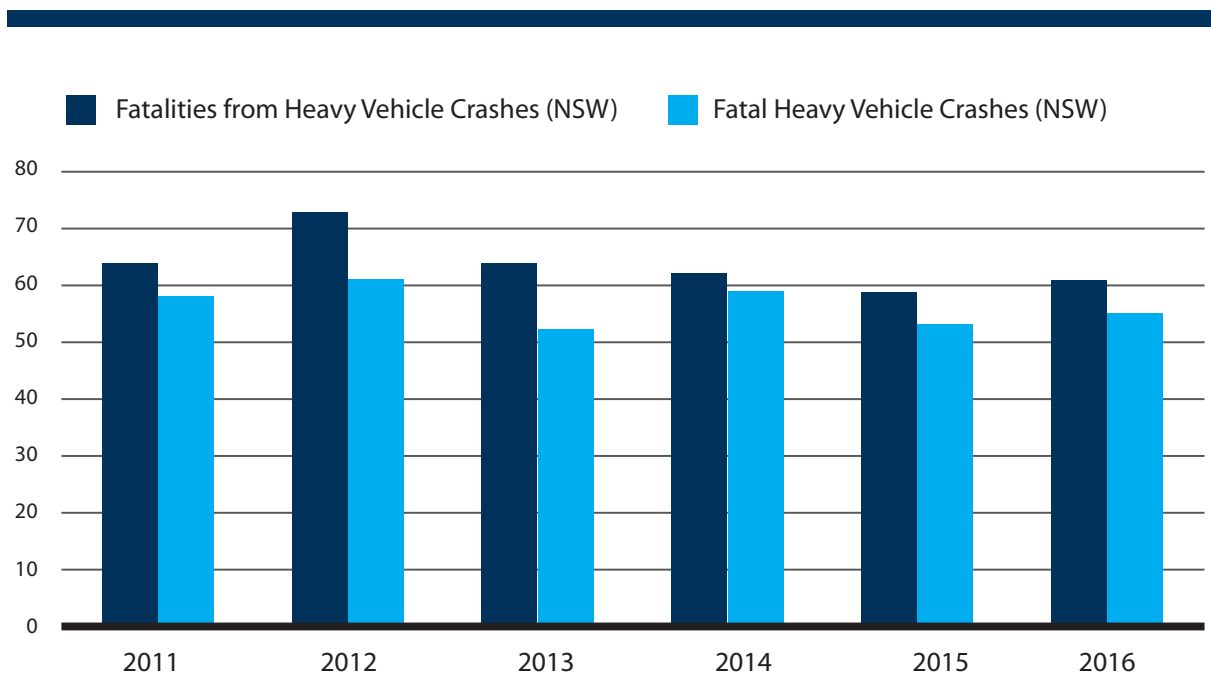
In 2016 there were **61 fatalities** from **55 fatal heavy vehicle crashes** in NSW.

These statistics show that, since 2011, the number of fatalities from heavy vehicle crashes has declined by 4.69% in NSW. This is compared to a decline of 8.65% nationwide. During this period, the share of fatal heavy vehicle accidents occurring in NSW has risen from 30.77% to 32.11% of the total annual number of heavy vehicle fatalities.

Furthermore, as reported in the *Sydney Morning Herald* in January 2018, the number of deaths from articulated truck crashes increased by 86% for the 12 months to September 2017.⁴

Within this context, it is quite proper for the Joint Standing Committee on Road Safety (Staysafe Committee) to consider this reference.

Figure 2: Fatalities and Fatal Crashes from Heavy Vehicles in NSW (2011 - 2016).



⁴ Ann Williamson *Truck drivers on the road too long to stay safe* (2017), The Sydney Morning Herald www.smh.com.au/comment/truck-drivers-on-the-road-too-long-to-stay-safe-20180101-h0c9q6.html

TELEMATICS

ALC has long supported a mandatory requirement for heavy vehicles (as defined by the HVNL)⁵ to be fitted with a telematics device. This device collects information such as vehicle speed, vehicle location, the distance travelled by a vehicle and the times a vehicle engine was on or off

This position is set out in **Attachment A**.

As the 2013 Heavy Vehicle Compliance Review Consultation Draft, prepared by the National Transport Commission, indicated:

Research into deterrence theory was also revealing that size of punishment is relatively meaningless to offenders and would-be offenders. What matters is the probability of detection and punishment of illegal behaviour. In the heavy vehicle context, probability of detection and punishment varies widely according to location and typography.⁶

Given this, it is noteworthy that the Fair Work Commission was satisfied that installing outward facing and driver facing cameras can contribute to better safety outcomes in the road transport industry.⁷

A recent survey conducted by Teletrac Navman also found that companies who have implemented, or are planning to implement, telematics technology saw speed prevention (58%) and monitoring hours to prevent driver fatigue/exhaustion (39%) as the top two safety benefits realised by using telematics.⁸

ALC also notes that a cost-benefit assessment and prioritisation study of 21 vehicle safety technologies conducted for the European Commission in 2005, based on a wide range of Electronic Data Reporting (EDR) field examples and studies, concluded that broad accident data recorder implementation led to:

- » *an average reduction of collision probability of 10% for fatalities as well as for serious and light injuries;*
- » *benefits estimated to outweigh costs by a factor of 7; and*
- » *behaviour changes minimising the risk and severity of accidents and repair costs by up to 25%.⁹*

More generally, a recent survey found that 88% of transport businesses are currently using, or a planning to use, telematics.¹⁰

In effect, the competitive nature of the heavy vehicle industry is encouraging transport businesses to adopt telematics to improve the efficiency and safety of their operations.

Bearing in mind these statistics, ALC believes a move to mandatory telematics will not place an unduly onerous requirement on the heavy vehicle industry. Indeed, today a smartphone already has the capability to act as a basic telematics device, and the capacities of such technology will only improve in the years to come.

5 Usually a vehicle with a GVM or ATM of more than 4.5 tonnes – see section 6 of the HVNL.

6 National Transport Commission *Heavy Vehicle Compliance Review Consultation Draft* (2013): 6 and 26. The comment on page 38, which reads 'As noted earlier, probability of detection is a key factor in securing compliance' should also be noted.

7 *Toll North v. Transport Workers Union* [2014] FWC 2945 para 85 www.austlii.edu.au/cgi-bin/viewdoc/au/cases/cth/FWC/2014/2945.html.

8 Teletrac Navman 2017 *Telematics Benchmark Report Australia Transportation Edition* (2017): 14.

9 European Commission Directorate-General for Energy and Transport *Vehicle Event Recording Based on Intelligent Crash Assessment* 6 October 2009 p.39.

10 Teletrac Navman 2017 *Telematics Benchmark Report Australia Transportation Edition* (2017): 11.



The ability to capture this data provides a significant opportunity to make the heavy vehicle industry safer.

For example, some of the Chain of Responsibility (**CoR**) requirements contained in the HVNL, including speed and fatigue requirements, can be monitored with telematics devices.

Roads and Maritime Services (**RMS**) could potentially have access to data that indicates a breach of the HVNL or any other heavy vehicle law or regulation.

The current Commonwealth Government has also recognised the value of telematics in improving regulatory compliance and heavy vehicle safety. In an interview in April 2016, the then Minister for Employment, Senator the Hon. Michaelia Cash, told Sky News that:

DAVID SPEERS: *As Minister, would you like to see every truck installed with GPD technology to track how fast, how many hours drivers are doing at all times.*

MINISTER CASH: *I think it is a great step in the right direction that we utilise technology to the most effective way that we can to ensure that we are all safe on the roads.¹¹*

OTHER USES

Data is also required for other statutory purposes.

For example, the COAG Transport and Infrastructure Council committed in May 2015 to a four phase process to reform heavy vehicle user charging.

Technology will facilitate the development of this regime.

As the Productivity Commission indicated in its 5 year productivity review published in 2017:

Surveys gauging user perception of transport quality and issues suggest that the substantial investments in new capacity that have been made in recent years may have provided some relief, but also induced greater use of roads. Governments have recognised the need for changes to road regulation but there has been, overall, little progress.

Technology now exists that could readily address the lack of price signals for road investment and complement other revenue sources. But the willingness to trial such developments requires a catalyst.¹² (Emphasis added)

The 2015 Competition Policy Review (**the Harper Review**) also said:


Reform of road pricing and provision should be a priority. Road reform is the least advanced of all transport modes and holds the greatest prospect for efficiency improvements, which are important for Australian productivity and community amenity.

Technologies are available that allow for more widespread application of cost-reflective pricing in roads, taking into account location, time and congestion. Revenue raised through road pricing should be channelled into road funds to promote more efficient road use and investment.¹³

11 <https://ministers.employment.gov.au/cash/sky-news-pm-agenda-david-speers>.

12 Productivity Commission *Shifting the Dial 5 Year Productivity Review – Inquiry Report* (2017): 135 www.pc.gov.au/inquiries/completed/productivity-review/report/productivity-review.pdf.

13 Australian Government *Competition Policy Review Final Report* (2015): 216 http://competitionpolicyreview.gov.au/files/2015/03/Competition-policy-review-report_online.pdf.



To that extent, it should be noted that Transport Certification Australia (TCA) is working with Main Roads Western Australia to use telematics and related intelligent technologies to implement a new road charging solution.¹⁴

Information collected and retained by operators is the most pragmatic and achievable way to allow road users to gather this difficult-to-collect data and use it as the demand estimate in any investment and maintenance plan submitted for consideration to an economic regulator.

Finally, there has always been interest in the supply chain industry to encourage the ability to transfer non-proprietary information to improve the flow of freight from one end of a freight chain to another, in a manner similar to the Hunter Valley Coal Chain.

ALC has long recommended the development of policies to allow this to happen, with the economic regulator with responsibility for land transport pricing and access decisions permitted to authorise such a practice if it regarded as being *prima facie* anticompetitive.

These are all reasons why telematics should be made mandatory in heavy vehicles.

HOW COULD THIS BE DONE?

ALC harbours concerns that as technology becomes more dynamic and cheaper, different jurisdictional regulators will require heavy vehicles to use multiple pieces of hardware prescribed by particular laws to capture data fields that may be identical to information required by other regulators.

As an example, section 144AC of the *Protection of the Environment Operations Act 1997* (NSW) allows the NSW Environmental Protection Authority to require certain operators transporting waste to carry specific approved GPS tracking devices.

ALC believes the law should meet clear technical standards that can be used in different statutory and commercial applications, with evidence collected on what could be described as being the ‘civil’ standard of proof. This would be sufficient to allow a regulator to develop better targeted enforcement strategies, based on quality data. It is not necessary for a regulator to have information at the ‘criminal’ level of proof for this style of analysis.

As the *Compliance and Enforcement Framework for Heavy Vehicle Telematics* published by NTC in 2014 says:

Telematics systems generate detailed and accurate data that can be transmitted wirelessly to operators, regulators and enforcement agencies. In many regards, telematics technology increases the probability of detecting driver and vehicle breaches. It is critical that drivers are not unfairly targeted because they use regulatory telematics and that regulators and enforcement agencies do not use telematics to focus on isolated small breaches.

Rather, regulatory telematics should provide an increased evidence base to identify patterns of behaviours and to enable regulators and enforcement agencies to develop intelligent, risk-based analyses and to target high levels of noncompliance. In turn, drivers and operators will be able to demonstrate compliant behaviour. In the longer term, regulators and enforcement agencies will have opportunities to consider the balance of roadside and back office approaches.¹⁵

¹⁴ https://tca.gov.au/documents/2017_03_22_TCA_Media_WARoadPrice.pdf.

¹⁵ NTC *Compliance and Enforcement Framework for Heavy Vehicle Telematics* (2014) [www.ntc.gov.au/Media/Reports/\(C5F39CEF-3F43-490C-8D2B-569185379C55\).pdf](http://www.ntc.gov.au/Media/Reports/(C5F39CEF-3F43-490C-8D2B-569185379C55).pdf): 8.

The framework then goes on to say:

The method to guide understanding of minimum standards is set out in Part 4: When you will need certification or government approval. It provides that the minimum standards of a telematics system should require a high level of assurance only when the data is explicitly gathered for an enforcement or supervisory intervention purpose, and particularly when the data is used to issue an infringement at the roadside.

Other compliance approaches, such as chain of responsibility, audit-based compliance and safety management systems, are not focused on enforcement-based infringements and do not have the same requirement to produce immediate and reliable data to establish an offence and to initiate a prosecution. Regulators and enforcement agencies will not seek as high a level of assurance from telematics systems generated for these alternative purposes. And when an operator uses telematics for entirely commercial purposes, or to generally increase their compliance, governments do not have a role deciding minimum standards for those systems.¹⁶

This recognises:

- » use of other technology to deter breaches of the law that is calibrated to a level that permits the data recorded being accepted as evidence to support a criminal prosecution, such as radar guns used to detect speeding, or a breathalyser used to determine blood alcohol levels; whilst
- » understanding that other systems without the same level of calibration can be used for auditing - for example, whether an operator is meeting the safety performance anticipated by the Chain of Responsibility provisions of the HVNL. Facilitating this auditing function is a principal reason why ALC supports mandatory telematics in heavy vehicles.

There are at least three ways that such a scheme could be implemented.

OPTION 1 – THE TOLERANCE MODEL

There are pieces of legislation that allow some degree of tolerance from an absolute standard.

For instance:

- » the *Coastal Trading (Revitalising Australian Shipping) Act 2012* creates an ‘acceptable tolerance limit’ of 20% as to the level of cargo a vessel under a temporary licence may carry in Australian waters;¹⁷ whilst
- » the *National Measurement Regulations 1999* specifies a 95% level of confidence in measuring equipment used in some circumstances.¹⁸ These regulations also set the maximum permissible error permitted by evidential breath analysers.¹⁹

Any law could be as simple as this, as it will allow software and hardware vendors to design applications that will satisfy the law while delivering a product at a price acceptable to industry.

A freight chain participant with a data recording obligation would be able to discharge the obligation should they use applications falling within the relevant statutory tolerance limits.

¹⁶ Ibid:7-8.

¹⁷ Section 6.

¹⁸ Schedule 7

¹⁹ Schedule 12.



If considered necessary, an offence could be created making it unlawful for a freight chain participant to falsely claim that a system used to record data falls within the accepted tolerances.

An offence of falsely representing that a software or hardware application satisfies a particular statutory requirement could also be created against a vendor if trade practice laws relating to the making of false and misleading claims are considered insufficient.

OPTION 2 – USING A TRUSTED SUPPLIER

The use of electronic work diaries in heavy vehicles was made compulsory in the US on 18 December 2017.²⁰

The relevant US Regulations require a heavy vehicle operator to carry an electronic logging device (as an ELD is called in the US) that is listed on the Federal Motor Carrier Safety Administration's registered ELD list, which is placed on the internet.²¹

Units are placed on the list on the basis of certification by the ELD provider that the unit complies with the technical specifications set out in the regulations.²²

In the Australian context, the hardware provider would be certifying compliance with the Telematics Data Dictionary maintained by TCA, containing common data elements across all specifications, to ensure inter-connectivity and inter-operability to support any number of current and future applications, to collect relevant data (such as work diary information).²³

OPTION 3 – PURE APPLICATION OF INTERNATIONAL STANDARDS

The third option is the mechanical operation of the system generally anticipated by *ISO 15638*, which establishes the Framework for Collaborative Telematics Applications for Regulated Commercial Freight Vehicles (also known as **TARV**).²⁴

This family of standards is being developed for telematics applications for regulated commercial freight.²⁵

Broadly, this anticipates that a government entity will grant type approvals (certification that a tested product meets a minimum set of regulatory, technical and safety requirements), with data held and monitored by service providers approved by government.

20 Section 395.1(1)(a).

21 Contained in Part 395 of Chapter 3 of Volume 5 to Title 49 (Transportation) of the US Code of Federal Regulations: www.ecfr.gov/cgi-bin/text-idx?gp=&SID=&mc=true&tpl=/ecfrbrowse/Title49/49tab_02.tpl and more specifically www.ecfr.gov/cgi-bin/retrieveECFR?gp=1&ty=HTML&h=L&mc=true&=PART&n=pt49.5.395.

22 Part 5 of Appendix A to Subpart B of Part 393 – Functional Specifications for All Electronic Logging Devices

23 <https://tca.gov.au/ntf/tdd>.

24 www.iso.org/standard/59184.html

25 With Standards Australia Technical Committee IT-023 looking at developing Australian Standards mirroring this area of work.



THE ALC VIEW

ALC believes that heavy vehicles should carry telematics to discharge identified statutory requirements identified by an Australian law.

Such obligations could include (in the safety context) measuring speed and vehicle movements or work diary information, as well as information outside of the safety context that can be used for road charging purposes.

Collection of this information could then be used by agencies like RMS for compliance and enforcement purposes, increasing the likelihood of improved safety outcomes.

The design of the mandate should be consistent with, or be incorporated within, the National Telematics Framework.²⁶ This means any relevant equipment must comply with the Telematics Data Dictionary, if for no other reason than the cost that would be imposed on operators who purchase telematics for one statutory purpose then having to purchase other units complying with a different standard.²⁷

Therefore, to maximise heavy vehicle safety outcomes in NSW, ALC recommends the following:

- 1. To improve safety outcomes, the HVNL should require heavy vehicles to carry telematics equipment.**
- 2. Relevant legislation (including the HVNL) should set out:**
 - a. what information should be recorded; and
 - b. the circumstances where enforcement and other officers can access information
- 3. The HVNL should be identified as the law regulating telematics in heavy vehicles.**
- 4. The HVNL should accordingly be amended to:**
 - a. allow the making of some form of legislative instrument that contains:
 - i. something like the Data Dictionary currently maintained by TCA, that can be amended from time to time as recording requirements for either safety or other purposes are subsequently added by other Australian laws, so there is a common set of data definitions to facilitate the collection, exchange and use of data and information; and
 - ii. privacy standards that must be met by those eligible to access the personal and business information of a transport operator.
 - b. allow amendments to primary legislation so that:
 - i. road transport operators are required to use software or hardware applications certified by the vendor as satisfying data dictionary standards and to maintain data as required by an Australian law;
 - ii. an offence of falsely representing that a software or hardware application satisfies a particular statutory requirement could also be created against a vendor if trade practice laws relating to the making of false and misleading claims are considered insufficient;
 - iii. if considered necessary, a capacity to prescribe an industry standard that must be met to maintain recorded data; and
 - iv. offences are created to penalise activities such as tampering with either hardware or data.

Australian Logistics Council
February 2018

²⁶ <https://tca.gov.au/ntf/national-telematics-framework>. The framework is comprehensively based on the TARV.

²⁷ <https://tca.gov.au/ntf/td>

ATTACHMENT A

Electronic gathering of data for government purposes by the Australian Freight Chain – a policy restatement

1. Data collected by a business is the property of the business.
2. Regulators and enforcement agencies may only collect and use data collected by businesses:
 - a. in the manner authorised; and
 - b. for the purposes intended by
 - c. an Australian law.
3. Access should otherwise be governed by the privacy principles in force in the jurisdiction.
4. Regulators must clearly specify in legislation:
 - a. the data fields to be collected;
 - b. the purposes for which it is being collected; and
 - c. the confidence level the data must possess.
5. Regulators need to accept that in the usual case, commercial data applications will not be calibrated to record data to a level that it can be presented as evidence of the facts recorded beyond a reasonable doubt.
6. However, such a level of certainty is not necessary in most government applications, such as data recorded for revenue, planning or monitoring purposes. Regulators therefore need to consider whether a particular statutory requirement needs the collection of data accurate to the level of confidence required for prosecution purposes.
7. Businesses should be able to use systems designed and represented by vendors as meeting prescribed data confidence levels for a particular statutory purpose, or if absolutely necessary, using equipment that satisfies regulator 'type approval' requirements.
8. Regulators should endeavour to develop a consistent confidence level for data collected for civil statutory purposes.

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