

A COMMON DATA SET FOR OUR SUPPLY CHAIN

DEVELOPING AND IMPLEMENTING THE
NATIONAL FREIGHT AND SUPPLY CHAIN STRATEGY
DISCUSSION PAPER 2

OCTOBER 2018



PO Box 20 DEAKIN WEST ACT 2600
P: +61 2 6273 0755 E: admin@austlogistics.com.au
www.austlogistics.com.au

©Australian Logistics Council, October 2018



[@AustLogistics](https://twitter.com/AustLogistics)



linkedin.com/company/australian-logistics-council

CONTENTS

ALC MEMBERS	2
ABOUT THIS DISCUSSION PAPER	3
THE ALC VISION	4
INTRODUCTION	5
CASE STUDY: ALC/GS1 AUSTRALIA SUPPLY CHAIN VISIBILITY STUDY	5
GLOBAL DATA STANDARDS	6
THE NATIONAL FREIGHT AND SUPPLY CHAIN STRATEGY	7
COLLECTION AND USE OF DATA AT THE PLANNING LEVEL	8
DEVELOPMENT OF A TRANSPORT SATELLITE ACCOUNT	8
ROAD FREIGHT TELEMATICS DATA COLLECTION	9
THE FREIGHT OBSERVATORY	9
PRIVACY AND OWNERSHIP OF DATA	10
THE FIRST STEP – DEVELOPING A COMMON DATA SET FORM	11
INTERNATIONAL ALIGNMENT OF DATA STANDARDS	12
CONCLUSION	13



The Australian Logistics Council (ALC) is the peak industry body representing the major and national freight logistics companies, with a focus on national supply chain efficiency and safety.

ALC MEMBERS

Corporate members



Associates



National sponsors



Research & universities



Honorary fellows

Andrew Ethell, March 2017
Don Telford, March 2016
Ingilby Dickson, March 2015
Ian Murray AM, March 2012

Paul Little AO, February 2011
Peter Gunn AM, February 2011
Ivan Backman AM, May 2010
David Williams OAM, May 2010

Last updated October 2018

ABOUT THIS DISCUSSION PAPER

This Discussion Paper is the second in a series that ALC is releasing to provide insight into industry's thinking around the implementation of the National Freight and Supply Chain Strategy, and policy areas that should be prioritised for action.

The material contained in this Discussion Paper draws on the outcomes of ALC's inaugural Supply Chain Technology Summit, which was held in Melbourne in May 2018, as well as ALC's continuing conversations with industry participants.

The Discussion Paper has been developed with the assistance of the ALC Technology Committee.

It is evident that technology and data will play an increasingly important role in the future operation of Australia's supply chains – allowing Australia to meet its growing freight task more safely and efficiently.

In order to secure that outcome, there is a significant amount of work to be done to improve both the quality and quantity of data available to policy makers and industry participants regarding the operation of Australia's supply chains.

This Discussion Paper sets out a practical pathway for achieving this outcome, allowing Australia to more effectively monitor and measure supply chain performance.

This will help promote more efficient deliveries and lower prices for Australian consumers, and will also help make certain Australia's export-dependent economy can remain internationally competitive.



THE ALC VISION

- 1 The ALC Board has endorsed a policy position that **“ALC and its members work towards the adoption of GDS by all participants in the Australian logistics industry.”**

Global Data Standards (GDS) will deliver enormous economic benefits through enhanced freight visibility and should be adopted by the freight logistics industry.

The Australian Competition and Consumer Commission (ACCC) should be involved in the development of any common data set, so that any competition law issues can be addressed.

- 2 The Australian Bureau of Statistics (ABS) should ensure that the Transport Satellite Account is fully operational by the end of 2019.
- 3 ALC encourages continued industry participation and government commitment to the Road Freight Telematics Data Collection Project to ensure that this important data can be used by industry to enhance efficiency and safety.

- 4 To allow industry and Australian governments to make informed policy and infrastructure decisions, a Freight Observatory should be created. The Freight Observatory should:

- a. measure outcomes in the Australian supply chain;
- b. develop performance indicators relating to the Australian supply chain;
- c. collect & catalogue the data in a manner that is compatible with appropriate Global Data Standards (GDS) to facilitate interoperability;
- d. provide information about the performance of the Australian supply chain to public and private decision makers;
- e. Liaise with ‘like’ international bodies & monitor international trends in order to provide informed advice to public and private decision makers; and
- f. The data collected and managed by the Freight Observatory (although owned by the party providing the data) would also inform the *National Infrastructure Data Collection and Dissemination Plan (the Data Collection Plan)* developed by the Bureau of Infrastructure, Transport and Regional Economics (BITRE) and the Transport Satellite Account.

- 5 To provide confidence in the management of confidential business data, the collection and use of information provided by industry should be governed by an enforceable code of conduct. The Australian Privacy Principles should otherwise inform how data should be collected, handled and used.
- 6 Government and industry should establish a mechanism to develop a common data set. This common data set can then be used to facilitate efficiency and safety.
- 7 Due to the international nature of trade, the Australian Government should encourage the development of a multilateral agreement (either through the development of a joint ISO/IEC standard or refinement of model laws facilitating the use of electronic communications managed by the United Nations body UNCITRAL) to identify a common data set that could be developed for global trade.





INTRODUCTION

The constant evolution and improving affordability of technology, together with the use of open data standards, offers tremendous scope to improve the efficiency of Australia's supply chains.

The development of the Australian Transport Standards for Freight Labelling is just one example of the benefits that could be realised.

Case Study: ALC/GS1 Australia Supply Chain Visibility Study

ALC, through its Technology Committee, and in collaboration with businesses, Austroads, GS1 Australia and the (then) Department of Infrastructure and Regional Development, have investigated the benefits to Australian businesses and their supply chains from the use of global data standards (GDS) to create and transmit information on the events occurring during the physical movement of goods between suppliers and their customers, across multiple transport modes and custody of the freight.

The report – *Austroads Research Report AP-R538-17 – Investigating the Potential Benefits of Enhanced End to End Supply Chain Visibility* was released at ALC Forum 2017.



The use of GDS has been proven to improve the visibility and traceability of freight. Standards allow a common language to identify the freight, the transport assets and the events during supply chain execution. It enables all parties to gain real-time information and to be able to control and manage the freight more effectively. It has also resulted in benefits such as improved planning, efficient operations, improved compliance, product integrity and supply chain analytics.

Public value can also be derived from increased visibility in Australia's supply chains through capacity optimisation and scheduling (terminals and network infrastructure), planning for investment (demand, network utilisation by freight and private sector data), linking real-time compliance monitoring (container weights and transport security), and emergency management (real-time response data).

It has been found however that logistics service providers are not taking advantage of adoption of GDS to provide improved visibility, as they perceive cost outweighs benefit. This is due to the prevalence of incompatible bespoke IT systems, non-standard data formats and a lack of collaborative mindset.

The penalty for not adopting open GDS, which will largely fall on small business, is significant. This avoidable industry cost has been estimated at AUD 1.63 billion, which ALC believes will impact the productivity of the sector.

GLOBAL DATA STANDARDS

In May 2018, ALC held its first Supply Chain Technology Summit (**the Technology Summit**) to discuss how industry can use technology to improve productivity and safety outcomes.

A clear consensus reached at the Technology Summit was the need for data to promote visibility and interoperability.

Visibility is important as it allows improved predictability, efficiency, productivity and sustainability, reduced need to keep inventory, the identification of bottlenecks and a reduction in fatigue and errors.

It was further noted that data quality is vitally important. New technologies rely on data feeds. If poor information goes in poor data will come out.

Therefore every company must take responsibility for the information contained in their systems. This is because end to end supply chains have multiple stakeholders that all rely on each other.

At present, the quality of data passed through the supply chain can be quite poor, especially when participants record freight movements using different data systems that cannot 'talk' to each other.

Errors can frequently occur as the same information is entered on numerous occasions on different systems. Indeed, it is possible for a single container number to be fed into computer systems up to 30 times as the container moves through the supply chain. This is to satisfy the various requirements of customers, port operators, quarantine, customs operations and other parties involved in a shipment.

This situation could be greatly improved, and supply chain efficiency greatly enhanced, through the adoption of GDS in Australia's freight logistics industry. This view was given added impetus by the ALC Board meeting of 27 June 2018, which endorsed a policy position that *"ALC and its members work towards the adoption of GDS by all participants in the Australian logistics industry."*

Recommendation 1: Global Data Standards (GDS) will deliver enormous economic benefits through enhanced freight visibility and should be adopted by the freight logistics industry.

The Australian Competition and Consumer Commission (**ACCC**) should be involved in the development of any common data set, so that any competition law issues can be addressed.

It is possible for a single container number to be fed into computer systems 30 times as the container moves through the supply chain.



THE NATIONAL FREIGHT AND SUPPLY CHAIN STRATEGY

On 18 May 2018 the Council of Australian Government's Transport and Infrastructure Council (TIC) agreed to a framework for developing a 20 year National Freight and Supply Chain Strategy (the National Strategy).

The National Strategy will build on the recommendations from the *Inquiry into National Freight and Supply Chain Priorities*. These recommendations included a number of priority action areas identified by an Industry Expert Panel.

Priorities relating to data and technology identified by the Industry Expert Panel include:

- 2.1 Establish a data gathering and performance review mechanism focused on travel times and reliability on key freight routes and the efficiency of the interfaces at freight terminals with routine public reporting of performance over time.
- 2.2 Benchmark key export supply chain performance against international competitors.
- 2.3 Ensure the National Digital Economy Strategy, set up by the Australian Government in September 2017 to focus on ways governments, businesses and the community can seize the benefits of digital transformation, incorporates recommendations on freight priorities to create efficiencies. As an example, port community systems mentioned in priority 1.3 could be expanded.
- 2.4 Fund the Australian Bureau of Statistics to establish a transport satellite account to its national accounts that separately reports the value of freight transport for the economy as a whole (e.g. GDP, employment, etc.).
- 2.5 Fund a freight observatory to collect, analyse and publish freight performance data for all freight modes and supply chains to better inform decision making and investment, with appropriate governance arrangements and the potential for this function to be held by an independent body that has industry confidence.¹

The outcomes of the Technology Summit, and the observations contained in the Inquiry Report, support the more effective use of data in the supply chain.

The initiatives discussed in this paper are drawn from the Technology Summit and the Inquiry Report. The initiatives are intended to deliver the following key objectives:

1. improved supply chain efficiency and safety;
2. consistency and/or interoperability between infrastructure networks;
3. avoidance of duplication of hardware and software requirements; and
4. reduced operational costs.



¹ Australian Government Inquiry Into National Freight and Supply Chain Priorities – Report (2018): 11 - https://infrastructure.gov.au/transport/freight/freight-supply-chain-priorities/files/Inquiry_Report.pdf

COLLECTION AND USE OF DATA AT THE PLANNING LEVEL

The *National Infrastructure Data Collection and Dissemination Plan* has been developed by the Bureau of Infrastructure, Transport and Regional Economics (BITRE) and the Australian Bureau of Statistics (ABS) with the goal to:

- » fill key data gaps; and
- » develop performance data relevant to infrastructure operators and customers.²

On 18 June 2018, the then Minister for Urban Infrastructure and Cities, Hon. Paul Fletcher MP, released the Final Data Collection Plan.³

The Final Data Collection Plan provides a list of 16 priority projects to help achieve its purpose. These projects include:

- » Heavy Vehicle Infrastructure Asset Register;
- » Infrastructure Performance Dashboard;

- » Freight Performance Indicators;
- » Network Optimisation Frameworks;
- » Measuring Transport's Contribution to the Economy – Transport Satellite Account;
- » Non-Fatal Road Injury Data;
- » Customs Freight Data Analysis Project;
- » Road Freight Telematics Data Collection; and
- » Road Operator Data to Support Connected and Automated Driving

Two of these projects are of particular interest to ALC – development of a Transport Satellite Account and Road Freight Telematics Data Collection.

DEVELOPMENT OF A TRANSPORT SATELLITE ACCOUNT

ALC is pleased work is progressing on the development of a Transport Satellite Account by the Australian Bureau of Statistics (ABS). The need for such an account was identified in ALC's 2014 publication *The Economic Significance of the Australian Logistics Industry*.⁴

ABS Satellite Accounts present specific details on a particular topic in a manner which is separate from, but linked to, the core national accounts. Put simply, they allow an understanding of the significance of a particular industry within the broader national economy.

The linking of national accounts data with other forms of data collected (such as own account transport by non-transport industries), and the reorganisation in the way in which data is presented, will:

- » make analysis of the size and efficiency of the Australian logistics industry easier;
- » assist in identifying the impact the logistics industry has on the economy; and
- » improve investment and planning decisions by industry and governments.

Recommendation 2: The Australian Bureau of Statistics (**ABS**) should ensure that the Transport Satellite Account is fully operational by the end of 2019.

² Terms of reference may be found at https://bitre.gov.au/data_dissemination/tor.aspx

³ https://bitre.gov.au/data_dissemination/files/National_Infrastructure_Data_Collection_and_Dissemination_Plan.pdf

⁴ <http://austlogistics.com.au/wp-content/uploads/2014/07/Economic-Significance-of-the-Australian-Logistics-Industry-FINAL.pdf>



ROAD FREIGHT TELEMATICS DATA COLLECTION

ALC members have been cooperating with BITRE and the ABS since 2016 to develop experimental indicators for:

- » congested freight-significant network locations;
- » average travel speed of freight vehicles;
- » routes taken by freight vehicles;
- » origin and destination of freight vehicle movements; and
- » freight vehicle stop locations and durations.

The intention is to identify congested networks, key freight routes and average travel speed and travel times on key freight routes. Other outputs developed would include where, when and for how long freight vehicles are stopping and the amount of road freight activity.

Government agencies are now looking at increasing the number of freight service providers involved in developing this project.

Recommendation 3: ALC encourages continued industry participation and government commitment to the Road Freight Telematics Data Collection Project to ensure that this important data can be used by industry to enhance efficiency and safety.

THE FREIGHT OBSERVATORY

There is an increasing consensus that Australia should develop a **Freight Observatory**.

The Freight Observatory would be charged with measuring outcomes, developing performance indicators and providing information to public and private decision makers to allow them to make policy and investment decisions.

Infrastructure Partnerships Australia has suggested that a body, named Freight Performance Australia, could be created for this task.⁵

ALC has previously suggested that an independent body, which we named Freight Australia, could provide objective analysis of freight demand so that key freight routes can be identified and protected as well as allowing the development of long term plans to improve supply chain performance.⁶

The development by TIC of a body like Freight Performance Australia should be regarded as the first step towards the Freight Australia concept anticipated by ALC.

Involving TIC in the development of these bodies is important so that state government data can be efficiently collected and analysed. It is also appropriate given TIC's central role coordinating interjurisdictional cooperation in the development of the National Freight and Supply Chain Strategy.⁷

5 Infrastructure Partnerships Australia Fixing Freight: Establishing Freight Performance Australia (2018): <http://infrastructure.org.au/wp-content/uploads/2018/04/Fixing-Freight-Establishing-Freight-Performance-Australia-1.pdf>

6 See discussion in ALC (2015) Draft Discussion Paper Australian Government's Freight Rail Policy Objectives: <http://www.austlogistics.com.au/wp-content/uploads/2015/12/ALC-Submission-Draft-Discussion-Paper-on-Australian-Government-Rail-Policy-Objectives-December-2015.pdf>

7 As a preliminary step, the ABS could establish a specific branch within the organisation to perform the freight observatory function. The ABS' traditional commitment to maintaining the confidentiality of commercial data could provide industry with the confidence to provide data to a 'freight observatory' administered by it

PRIVACY AND OWNERSHIP OF DATA

Industry participants place an understandably high premium on privacy. They seek assurance that data collected is only used for statistical purposes.

Confidence in how data is handled is vital if it is to be willingly and voluntarily supplied. This is why some argue a Freight Observatory should be independent of government.

It is clear that a statement of privacy principles drawn from the Australian Privacy Principles is needed to give industry confidence that data will be used appropriately. This will be particularly relevant if the proposed agency cannot be established under federal legislation.

To provide a further layer of protection, the provision or use of information provided to (or by) the Freight Observatory should be governed by an enforceable code of conduct. This would be similar to the way the recently enacted *European Union General Data Protection Regulation* protects the use and exchange of data in Europe.⁸

The party providing any data would remain its owner.

Recommendation 4: To permit industry and Australian governments to make informed policy and infrastructure decisions, a Freight Observatory should be created. The Freight Observatory should:

- » measure outcomes in the Australian supply chain;
- » develop performance indicators relating to the Australian supply chain;
- » collect & catalogue the data in a manner that is compatible with appropriate Global Data Standards (GDS) to facilitate interoperability;
- » provide information about the performance of the Australian supply chain to public and private decision makers; and
- » Liaise with “like” international bodies & monitor international trends - provide informed advice to public and private decision makers.

The data collected and managed by the Freight Observatory (although owned by the party providing the data) would also inform the *National Infrastructure Data Collection and Dissemination Plan (the Data Collection Plan)* developed by the Bureau of Infrastructure, Transport and Regional Economics (**BITRE**) and the Transport Satellite Account.

Recommendation 5: To provide confidence in the management of confidential business data, the collection and use of information provided by industry should be governed by an enforceable code of conduct. The Australian Privacy Principles should otherwise inform how data should be collected, handled and used.



⁸ <https://gdpr-info.eu/> See particularly Articles 40 and 41 of the Regulation.



THE FIRST STEP – DEVELOPING A COMMON DATA SET FORM

In May 2018, ALC held a Supply Chain Technology Summit to discuss how industry can use technology to improve productivity and safety outcomes.

The Summit highlighted clear demand for the development of a common set of open data standards. These data standards would be used to collect information in a standardised fashion so the information can be used throughout the supply chain. It would also enhance the development of the analytical capabilities of freight and supply chain participants.

Development of such a data set would also provide usable information that can enhance the analytical capabilities of supply chain participants.

Governments have also recognised the benefits of receiving data in a consistent manner for use in statutory and planning purposes.

Australian governments have made a tentative beginning in this area through the adoption of a *National Framework for Land Transport Technology*, which has amongst its intentions:

Improve the availability of open data in the transport sector.

Governments can assist industry, researchers and the public to develop innovative solutions to transport problems by providing open access to transport data. Australian governments are committed to an open-by default approach to transport data and through this action will improve the availability of open access transport data.⁹

The next step is for government and industry to establish a mechanism to develop a common data set form.

At the ALC Technology Summit, it was suggested that the Telematics Data Dictionary maintained by Transport Certification Australia already contains common data set forms to ensure inter-connectivity and interoperability for technology designed to assist compliance with heavy vehicle legislation. This could be used as the **starting point** for the development of a common data set with broader application.¹⁰

It is envisaged the mechanism referred to would take into account:

- » the Data Dictionary;
- » the outcomes of *Austrorads Research Report AP-R538-17 – Investigating the Potential Benefits of Enhanced End to End Supply Chain Visibility*; and
- » the continuing work of the iMove Co-operative Research Centre.

Finally, it has been suggested that in some circumstances the provision and use of some forms of data could lead to the substantial lessening of competition in a particular market.

Accordingly, the ACCC should be involved in the development of a common data set. This ensures that competition law considerations are taken into account at the commencement of the data set design process.

ALC suggests that the Transport and Infrastructure Council (TIC) could manage the overall development of this project.

Recommendation 6: Government and industry should establish a mechanism to develop a common data set. This common data set can then be used in functions that will facilitate efficiency and safety.

⁹ http://transportinfrastructurecouncil.gov.au/publications/files/National_Policy_Framework_for_Land_Transport_Technology.pdf - 23

¹⁰ <https://tca.gov.au/ntf/tdd>

INTERNATIONAL ALIGNMENT OF DATA STANDARDS

International alignment of data standards is an important point given the international nature of trade.

The international nature of the GS1 global data standards is noted; as is the fact the Telematics Data Dictionary is aligned with *ISO 15638* which establishes the Framework for Collaborative Telematics Applications for Regulated Commercial Freight Vehicles (also known as **TARV**).¹¹

ALC believes that although undesirable for governments to own or fund information transfer mechanisms, they can facilitate uptake by shaping consistent regulatory standards.

Given the global nature of today's marketplace, a multilateral agreement to determine information standards under a global coordinating body is highly desirable in the longer term.

Within this context the Commonwealth Government can display international leadership by seeking to develop a common data set at an international level by:

- » the development of a standard via some form of joint technical Committee of the ISO¹² and the IEC¹³, a mechanism used to develop, maintain or promote information technology standards¹⁴; or
- » the further refinement of model laws facilitating the use of electronic communications in international commerce, managed by the United Nations Commission on International Trade Law (UNCITRAL).¹⁵

It follows that if this initiative was adopted, individual Australian regulators should not develop their own data sets or data standards for their own statutory purposes.

Recommendation 7: Due to the international nature of trade, the Australian Government should encourage the development of a multilateral agreement (either through the development of a joint ISO/IEC standard or refinement of model laws facilitating the use of electronic communications managed by the United Nations body UNCITRAL) to identify a common data set that could be developed for global trade.

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

12 International Organisation for Standardisation

13 International Electrotechnical Commission

14 www.iso.org/isoiec-jtc-1.html

15 See: http://www.uncitral.org/uncitral/en/uncitral_texts/electronic_commerce.html



CONCLUSION

Australia has the opportunity to be an international leader in the way in which data is collected and used to facilitate supply chain efficiency, and to promote better planning and infrastructure investment decisions.

By promoting interoperability and the adoption of GDS, Australia can further drive the development of low-cost applications and technologies that will enable the automatic capture & sharing of transport data.

More widespread use of such technologies will ultimately assist all operators in the supply chain, including small and medium businesses.

By facilitating wider use of data – including real time data – in our supply chains, we will help make sure that Australian exports remain internationally competitive, and that domestic consumers can experience fewer delays and lower costs when it comes to deliveries.

This is an opportunity that policy makers should enthusiastically grasp.

Australian Logistics Council
October 2018

PO Box 20 DEAKIN WEST ACT 2600
P: +61 2 6273 0755 E: admin@austlogistics.com.au
www.austlogistics.com.au

©Australian Logistics Council, October 2018



[@AustLogistics](https://twitter.com/AustLogistics)



linkedin.com/company/australian-logistics-council