TMA HPLV Monitoring Scheme (VIC)

A scheme using the Telematics Monitoring Application (TMA) for the Department of Transport and Planning, Victoria

September 2024

Title	TMA HPLV Monitoring Scheme (VIC)
Document No.	TCA-SR41
Version	1.1
Date	September 2024
Status	Published

About Us

Transport Certification Australia (TCA) is a national organisation that provides assurance services relating to transport technologies and data to enable improved public purpose outcomes from road transport.

Priority outcome areas enabled by TCA services include improved road safety, transport efficiency, freight productivity, asset management and sustainability.

Key aspects of TCA include:

- An independent not-for-profit entity, with government oversight

- Administration of the National Telematics Framework, including its rules, specifications, agreements, digital infrastructure and other supporting services

- Assurance services that support but are appropriately separated from regulators, policy makers and enforcement activities, and underpin telematics applications and associated information and data services

- Advice that is based on evidence and a deep subject matter knowledge

- Trusted partner to both government and industry stakeholders, enabling a nationally consistent open market, with services covering all road vehicle types and associated digital infrastructure.

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1   Introduction

1.1   Purpose

This document describes the TMA HPLV Monitoring Scheme (VIC) ('scheme'), which is associated with the Telematics Monitoring Application (TMA).

The scheme is made available by the Department of Transport and Planning (DTP), Victoria, to enable monitoring of eligible high productivity livestock vehicles (HPLV) operating on the Victorian road network. HPLVs are Class 3 heavy vehicle combinations that exceed 26 metres in length, are designed to move livestock, and fall outside the Performance-Based Standards (PBS) scheme that applies to high productivity freight vehicles.

1.2   Scope

This document describes the scheme and how it is used with the TMA application.

The following information is included:

- Scheme parameters
- Key scheme processes
- Roles and responsibilities of scheme participants.

1.3   Background

DTP has introduced HPLV road networks into Victoria to assist the livestock carrier industry attain a high level of productivity.

HPLV road network access in Victoria is based on meeting the reference vehicle designs and other requirements stated in *Victoria's High Productivity Livestock Vehicle Pre-Approved Permit Information Sheet*, which is available from the National Heavy Vehicle Regulator (NHVR) website. Examples of eligible HPLVs include HPLV Tri A-Doubles, HPLV B-Triples and HPLV AB-Triples.

To participate in the scheme, a transport operator ('Operator') must conform with the requirements specified within the instrument of access approval, which is an applicable Class 3 permit available from the National Heavy Vehicle Regulator.

Enrolment in the TMA application is one of the requirements that must be met by the Operator. Enrolment in the TMA application is performed by the certified Application Service Provider (ASP) selected by the Operator[1].

The ASP is responsible for:

- The installation of a TCA-approved[2] telematics device in the vehicle being utilised in accordance with the instrument of access approval.
- The collection of data from vehicles enrolled in accordance with the requirements of the TMA application for the scheme.

ASPs provide data records to TCA. TCA analyses the data and makes reporting available to DTP and other bodies authorised by DTP via the Telematics Analytics Platform (TAP).

The TMA application[3] is offered at Level 2 Assurance appropriate to these vehicles (see Appendix A for a definition of Level 2 Assurance).

Note: Eligible HPLVs may be enrolled under either the TMA or RIM applications. For information on enrolling an eligible HPLV under the RIM application, see RIM HPLV Monitoring Scheme (VIC).

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[1] The Operator may be eligible to perform the role of ASP in full or part, subject to the approval of TCA.

[2] TCA approval of a telematics device may be in the form of type-approval or an equivalent approval mechanism acceptable to TCA. The ASP must meet applicable requirements in the functional and technical specification, irrespective of the approval mechanism.

[3] The TMA application can be used for a variety of purposes. In this document, TMA is described in the context of the scheme, which has specific business requirements associated with the standard operation of the TMA application

2 TMA HPLV Monitoring Scheme (VIC)

2.1 Participants

Figure 1 outlines the key interactions between participants for the use of the TMA application for the scheme:

- DTP, as the Authority of the scheme, requires the monitoring, with reporting, of the Operator's vehicle(s) as a condition of the Authority allowing the Operator and its vehicle(s) to participate in the scheme.

- Operators are vehicle operators that agree to enrol vehicles into the scheme, and consent to their data collected through the TMA application to be used for the intended purpose (as defined by the Authority and agreed to by the Operator in the ASP–Operator Agreement).

- ASPs, certified by TCA, offer telematics services (hardware, software and associated processes) to enable enrolment of eligible vehicles in the TMA application (as well as other applications available within the National Telematics Framework), collection of data from installed telematics devices and reporting of data to TCA.

- TCA administers the TMA application and its schemes within the NTF, ensuring that data security and privacy concerns are managed. TCA receives vehicle enrolment details from Operators via ASPs, and makes ASP–Operator Agreements available to participants. TCA also receives telematics data from ASPs, performs data processing; and makes standard and specialised reporting available to the Authority (and other bodies authorised by the Authority) via TAP as agreed between the Authority and TCA, and in accordance with the intended purpose as agreed by the Operator in the ASP–Operator Agreement.

Figure 1: Scheme Participants and Key Interactions
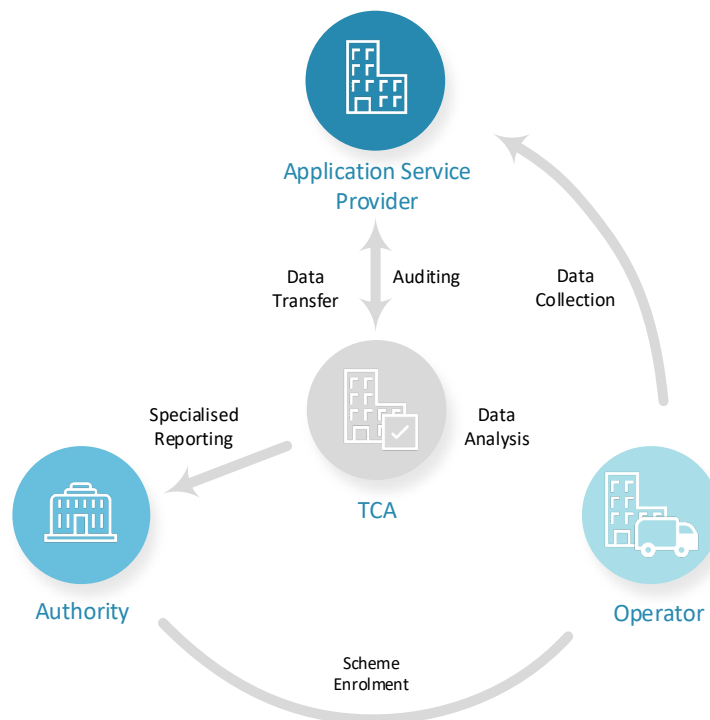
Note: Interactions between scheme participants are consistent with interactions between TMA application participants, and are not specific to the scheme.

2.2   Scheme Parameters

This section describes the constraints and assumptions that are used to deliver the TMA application for the scheme.

a.   ASP Certification

TCA will certify ASPs to provide services for the TMA application.

b.   Enrolment

ASPs will enrol vehicles in the TMA application and the scheme at the request of the Operator.

The ASP will manage key steps of enrolment including approval, and as necessary, cancellation and replacement.

Figure 2 shows the pre-enrolment steps for the scheme.

Figure 3 shows the reporting processes for the scheme.

Figure 4 shows the enrolment cancellation and reporting processes for the scheme.

Note: See Appendices for values that must be entered into the Scheme and Authority Code data elements of an enrolment form or enrolment report.

c.   Devices and Data Collection

The primary device used in the TMA application is a telematics device, approved by TCA for use at Level 2 Assurance or higher.

The telematics device will collect:

- Position data at 30-second intervals (or as approved by TCA); and

- Date and time data.

d.   Data Reporting

The ASP shall transfer data records collected through the TMA application to TCA no less frequently than each calendar month, and as described in *Telematics Monitoring Application Functional and Technical Specification*.

e.   Data Analysis and Reporting

TCA will data analysis and reporting for the scheme available to the Authority (and other bodies authorised by the Authority) through TAP.

Through TAP, the Authority (and other bodies authorised by the Authority) will have access to:

- Interactive maps, which represent de-identified data using data elements collected as part of the scheme; and

- Specific reporting required for scheme management.

    Note:

    (i)   *The type, number, frequency and graphical output of specific reporting will be subject to agreed terms reached between TCA and the Authority.*

    (ii)   *The TMA application relies on changes in vehicle position records over a 30-second period to derive vehicle speed. Average and maximum vehicle speed results are estimates only, and may be influenced by factors such as road geometry and GNSS quality. Authorities should exercise caution when interpreting vehicle speed derived from the TMA application.*

A Scheme Participation Report will be made available to the Authority on a monthly basis via TAP. This report may include standard measures and dimensions as shown in Table 1.

Table 1: Scheme Participation Report

Examples
• Count of all vehicles enrolled in the scheme
• Count of vehicles enrolled in the scheme that TCA received data from
• Vehicles enrolled in the scheme that TCA did not receive data from for at least 30 consecutive days *Note: Reporting of this measure will include vehicle identities. A participating vehicle will only be included in this measure if, without a satisfactory explanation, it has not provided data for at least 30 consecutive days.*
• Count of Operators with vehicles enrolled in the scheme
• Count of ASPs reporting data for vehicles enrolled in the scheme

2.3   Key Scheme Processes

Figure 2 outlines the key actions taken by each participant during the pre-enrolment stage of the operation of the scheme.

Note: This process assumes that TCA has already certified the ASP to provide TMA application services.

Figure 2: Pre-Enrolment Process

Operator	ASP	Authority	TCA

Obtains instrument of access approval (e.g. permit or Notice)

Self-assesses whether it meets scheme entry requirements

Informs ASP of intention to enter scheme and engages ASP to provide app. and scheme services

Agrees to provide application and scheme services

Signs ASP-Operator Agreement, retains original and sends a copy to ASP

Receives copy of ASP-Operator Agreement

Receives copy of ASP-Operator Agreement on request

Generates enrolment form in XML format with information from Operator

Receives copy of enrolment form in next data batch

Completes template and provides Certificate of Enrolment to Operator

If required by the Authority for the scheme, forwards Certificate of Enrolment template to ASP
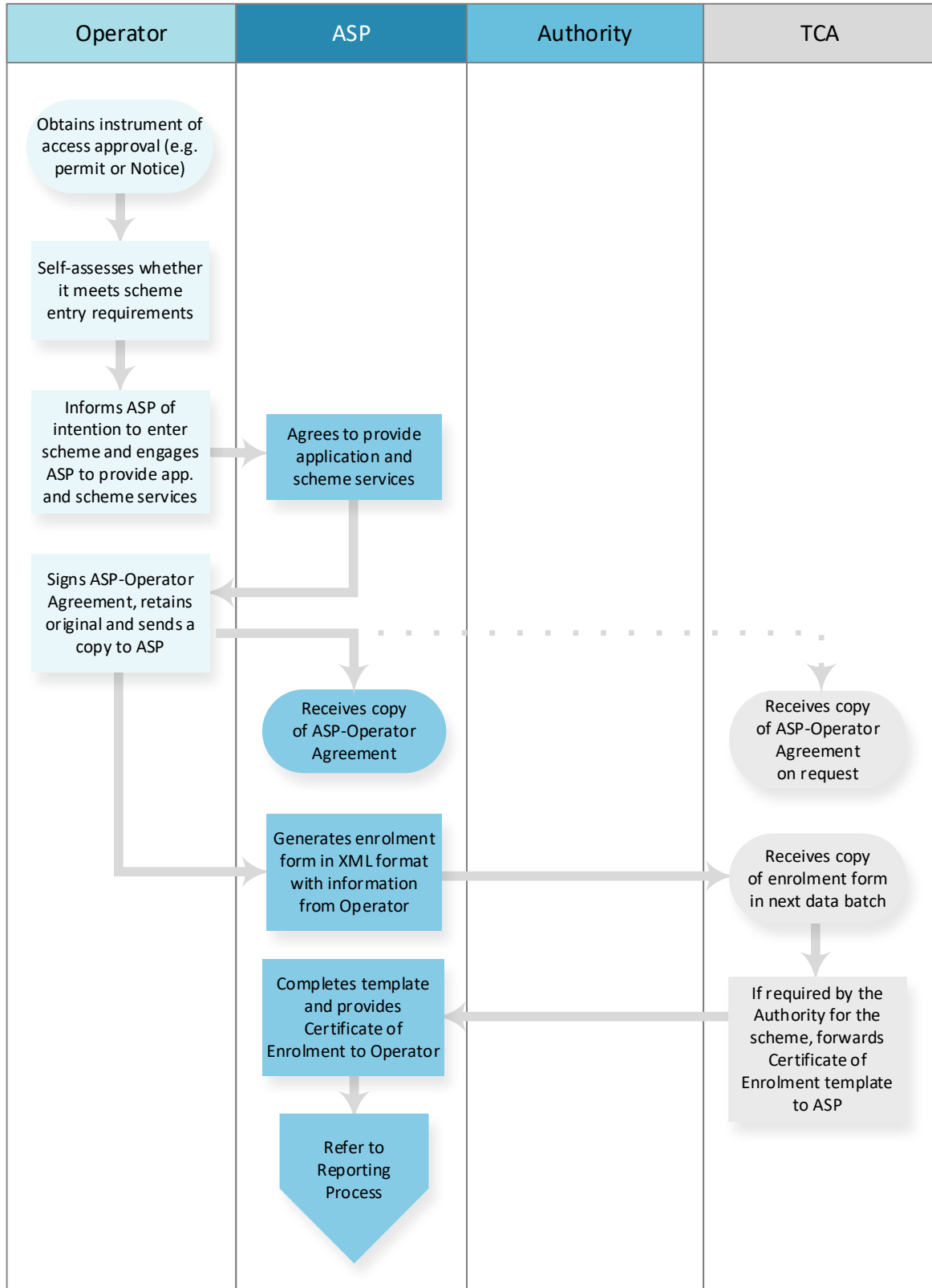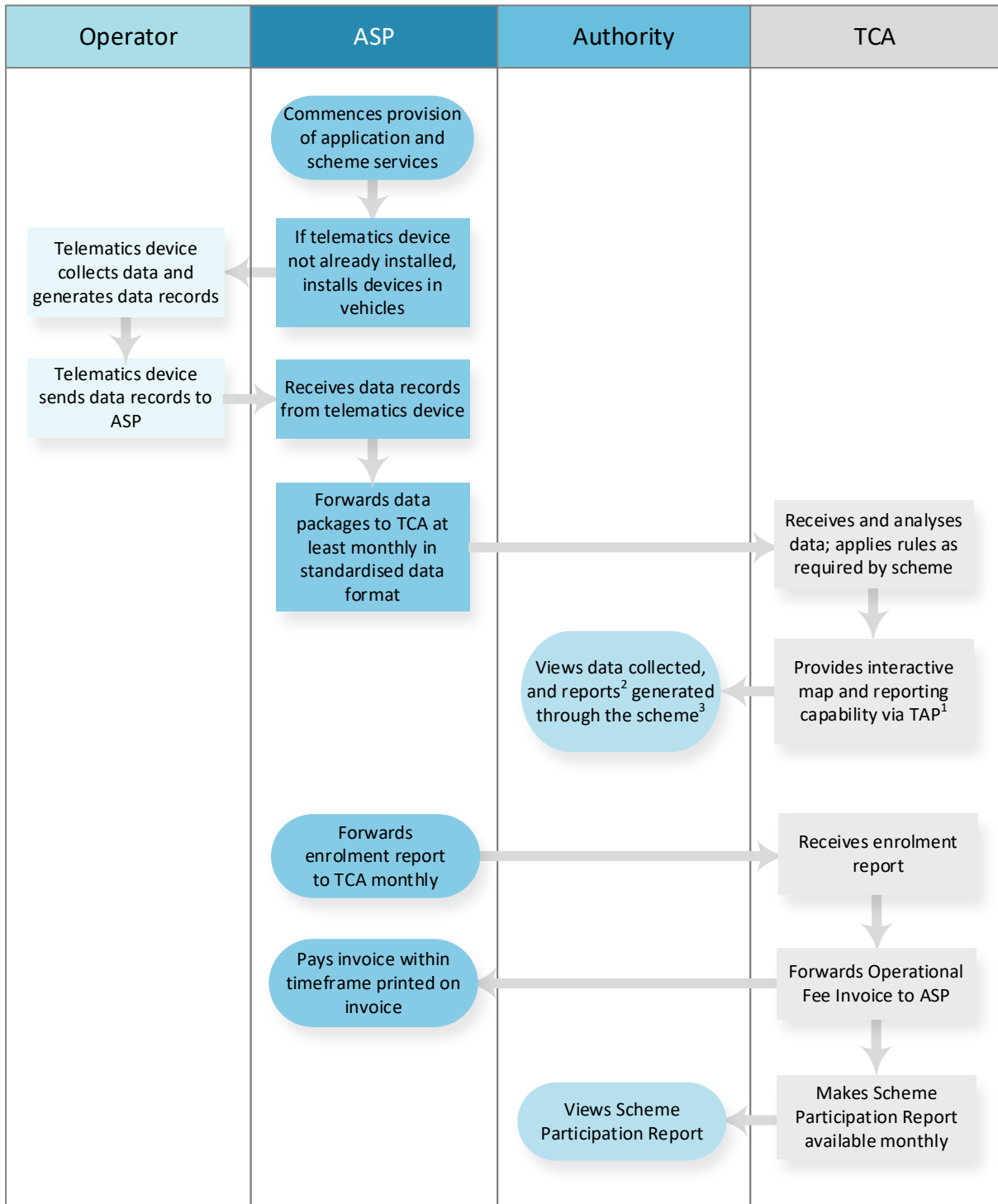
Refer to Reporting Process

Figure 3 outlines the key actions related to data collection, record generation and reporting.

Figure 3: Reporting Processes

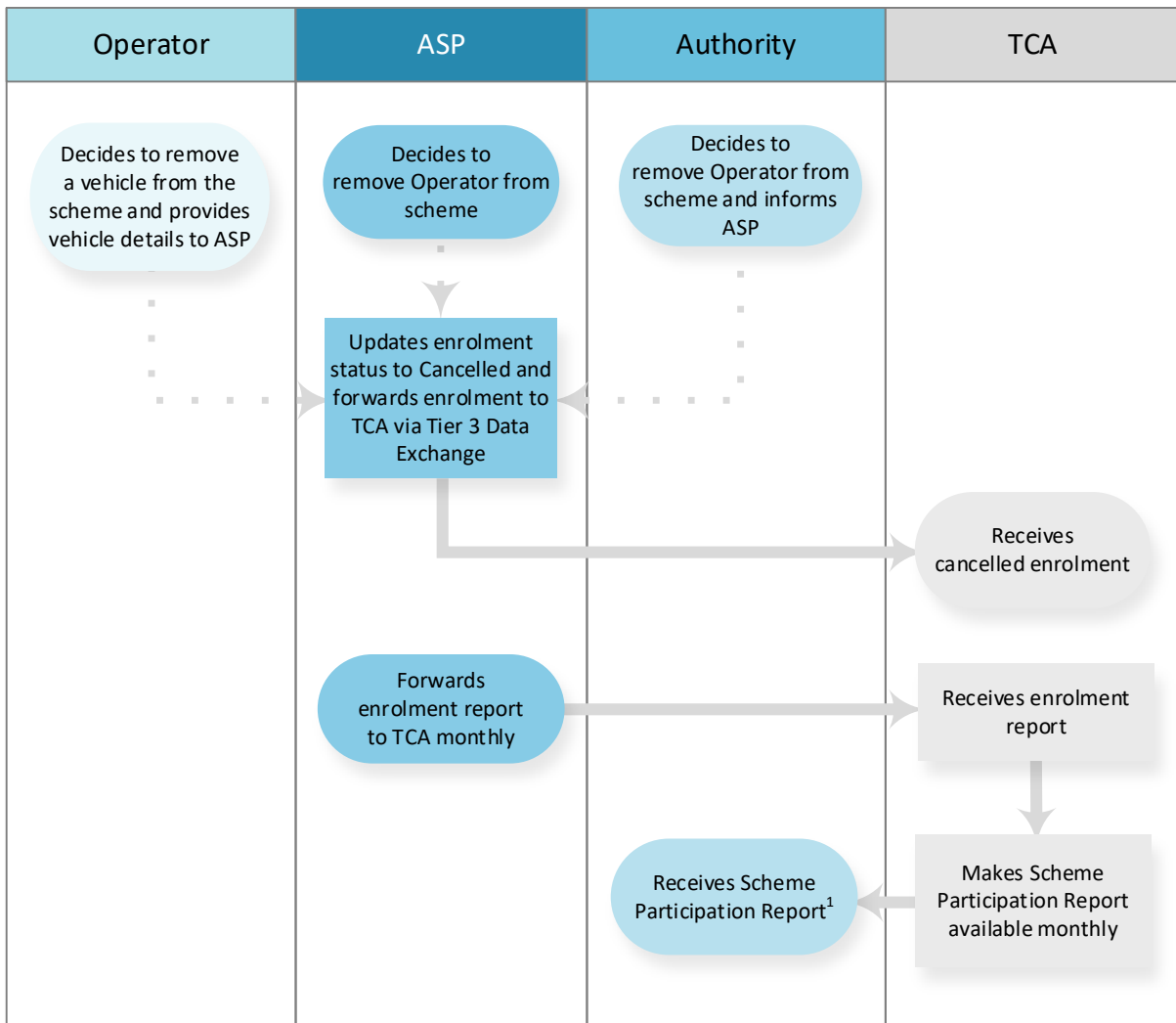| Operator	ASP	Authority	TCA
	Commences provision of application and scheme services		
Telematics device collects data and generates data records	If telematics device not already installed, installs devices in vehicles		
Telematics device sends data records to ASP	Receives data records from telematics device		
	Forwards data packages to TCA at least monthly in standardised data format		Receives and analyses data; applies rules as required by scheme
		Views data collected, and reports[2] generated through the scheme[3]	Provides interactive map and reporting capability via TAP[1]
	Forwards enrolment report to TCA monthly		Receives enrolment report
	Pays invoice within timeframe printed on invoice		Forwards Operational Fee Invoice to ASP
		Views Scheme Participation Report	Makes Scheme Participation Report available monthly

1. Data will be updated at least monthly.
2. The Authority will nominate the locations that will be subject to location-based reports (subject to agreed terms).
3. Other bodies authorised by the Authority may also view this information.

Cancellation of scheme enrolment may be initiated by the Operator, the Authority or the ASP.
Figure 4 outlines the key actions to cancel enrolment of a vehicle.

Figure 4: Enrolment Cancellation and Reporting Processes

Operator	ASP	Authority	TCA
Decides to remove a vehicle from the scheme and provides vehicle details to ASP	Decides to remove Operator from scheme	Decides to remove Operator from scheme and informs ASP	
	Updates enrolment status to Cancelled and forwards enrolment to TCA via Tier 3 Data Exchange		
			Receives cancelled enrolment
	Forwards enrolment report to TCA monthly		Receives enrolment report
	Receives Scheme Participation Report[1]		Makes Scheme Participation Report available monthly

1. Other bodies authorised by the Authority may also view this information.

2.4 Roles and Responsibilities

In delivering the objectives of the scheme, **TCA** will:

- Provide a document (this document) describing the use of the scheme as part of the TMA application
- Produce or maintain collateral, as necessary, to support the scheme. Examples include the provision of current versions of:
  - *Telematics Monitoring Application Functional and Technical Specification*
  - *Telematics Business-to-Business Data Exchange Functional and Technical Specification*
  - *Telematics Device Functional and Technical Specification*
- Support the reporting of data records via Tier 3 Data Exchange using a RESTful API, with these records formatted using a JSON format
- Support the reporting of enrolment forms and enrolment reports using a RESTful API, with these documents formatted using an XML format
- Inform ASPs of scheme details and entry conditions
- Produce an ASP–Operator Agreement for use with the scheme and make it available from the TCA website
- Ensure that TAP is set up to enable the Authority (and other bodies authorised by the Authority) to access reporting generated by the scheme (in accordance with the intended purpose as agreed by the Operator in the ASP–Operator Agreement)
- Maintain the cloud environment and databases to support the ingestion of data from the TMA application
- Produce and execute an ASP–TCA Certification Agreement, which formalises the relationship between TCA and the ASP with regard to ASP certification, or update the current Agreement
- Assess and certify that an ASP meets requirements to provide TMA application services
- Approve devices used in the scheme
- Ensure the intellectual property rights of ASPs are protected when assessing whether an ASP can meet operational requirements of the scheme
- If required by the Authority, provide certified ASPs with the Certificate of Enrolment template
- At the end of each month, forward Operational Fee Invoices to ASPs upon receipt of enrolment reports
- With the ASP, monitor via TAP whether a device malfunction has been resolved within agreed timeframes
- Notify the ASP when data from an enrolled vehicle has not been received for one month, followed by the Authority if unresolved
- Provide the Authority (and other bodies authorised by the Authority) with reporting outlined in 2.2e via TAP
- Ensure the confidentiality of ASP data is maintained
- Unless directed by the Authority and consented to by the Operator, de-identify the TMA telematics data it has received relating to the Operator's nominated vehicle(s) 12 months from its receipt of the data.

The Authority will:

- Maintain policy documentation required by the Authority for the scheme
- Undertake program coordination activities related to the scheme with TCA
- Access reporting outlined in 2.2e via TAP, and review data trends and numbers of enrolled vehicles
- In conjunction with TCA, communicate scheme-related policy changes to industry and stakeholders.

ASPs will:

- Interact with TCA to establish the delivery mechanism for provision of data packages to TCA (noting that a data package includes data records, enrolment forms and enrolment reports)

- Receive notification from Operators regarding the enrolment status of vehicles, and forward this information to TCA using an agreed mechanism on a monthly basis

- Provide the ASP–Operator Agreement to an Operator once an agreement to provide services for the scheme has been made

- Be responsible for the installation, operation and maintenance of telematics devices and the reporting of data received from those devices, and as described in the *Telematics Monitoring Application Functional and Technical Specification.*

- If required by the Authority, provide Certificates of Enrolment to enrolled Operators, using the template received from TCA, and coordinate their removal from vehicles no longer enrolled in the scheme

- Pay Operational Fee Invoices received from TCA, generated upon receipt of enrolment reports, within the timeframe shown on the invoice

- In the event of a device malfunction: liaise with the Operator and/or device supplier to resolve the issue; report the malfunction (unidentifiable) to TCA within the required time period; monitor via TAP whether the device malfunction has been resolved within agreed timeframes; and notify TCA when the malfunction has been resolved

- Provide back-office capability to process collected data records as required by the scheme

- Deliver data records to TCA, using agreed data delivery mechanism, required data formats and meeting data reporting requirements.

Operators will:

- Access scheme rules and entry conditions on the Authority website (or other website as applicable, such as the NHVR) and determine whether they meet those conditions

- Obtain the instrument of access approval and ensure compliance with its requirements for the scheme

- Upon self-assessment that scheme entry conditions are met, notify the ASP of its intention to enrol in the scheme

- Agree to share data collected by its ASP with TCA for the scheme using a signed ASP–Operator Agreement

- Follow rules for enrolment in the scheme

- Store original signed ASP–Operator Agreement and forward copies to the ASP and TCA (on request)

- Engage an ASP to provide services for the scheme

- Notify the ASP of the date that a vehicle or the Operator will no longer participate in the scheme.

A   Acronyms and Definitions

Acronyms

Acronym	Definition
API	application programming interface
ASP	Application Service Provider
HPLV	high productivity livestock vehicle
NHVR	National Heavy Vehicle Regulator
NTF	National Telematics Framework
PBS	Performance-Based Standards
TAP	Telematics Analytics Platform
TMA	Telematics Monitoring Application
UTC	Coordinated Universal Time

Definitions

Term	Definition
application	A capability of the NTF that provides business value to stakeholders, delivered as an assembly of policy, business components and technical components, within in the context of an identified level of assurance.
Application Service Provider (ASP)	A service provider that has been certified by TCA as meeting the requirements of one of more telematics applications.
ASP–Operator Agreement	A written agreement between an ASP, an Operator and TCA which sets out the terms on which the ASP will provide application services to the Operator, and the intended purpose for collecting data from the Operator's vehicle(s) enrolled in the scheme.
Authority	An entity, associated with a jurisdiction, responsible for the administration of one or more NTF applications. An Authority may appoint an administrator to perform its functions. *See also jurisdiction.*
data collection period	A whole number of days in the UTC time zone for which all application data is provided. Successive data collection periods are contiguous.
data package	A package of information sent via Tier 3 Data Exchange for a data collection period.
data record	A discrete and defined set of data elements generated by a device.
enrolment	Both the process and outcome by which an Operator enters an Authority's scheme. Each vehicle must be enrolled for each scheme it participates in. Enrolment also confirms the application and conditions (if applicable) that the vehicle is monitored under.

Term	Definition
enrolment form	An electronic document that formally and simultaneously records the enrolment of a vehicle within a scheme, and within the application required by that scheme.
enrolment report	A summary of enrolments relevant to a given Authority for a specified reporting period, including any aggregated data required by specific applications.
high productivity livestock vehicle (HPLV)	Class 3 heavy vehicle combination that exceeds 26 metres in length, is designed to move livestock, and falls outside the PBS scheme that applies to high productivity freight vehicles.
jurisdiction	A geographical area containing a road network (i.e. typically an Australian state or territory).
level of assurance	An assurance level that supports telematics applications, structured around the intended use of a telematics application, risks being managed, and the needs and expectations of consumers and other stakeholders.
Level 2 Assurance	Independent assessment of specific elements of a telematics application. Telematics data is combined with other data sources.
Operator	An entity that operates one or more vehicles eligible to enter a scheme.
Performance-Based Standards (PBS)	An alternative compliance scheme for heavy vehicles setting minimum performance levels for safe and efficient operation (as opposed to standard prescriptive rules). Greater access is generally afforded for higher performance.
scheme	The generic term for a specific use of an application linked to delivering a policy objective.
telematics device	The primary telematics unit which monitors vehicle parameters.
Tier 1 Data Exchange	A web services solution where structured information is exchanged that complies with requirements such as authentication, security, privacy and certainty of delivery. It includes exchanges of information related to a vehicle's enrolment in telematics applications, conditions and adherence to those conditions.
Tier 2 Data Exchange	The human-initiated (rather than automated) exchange of business-related information and advice. Typical exchanges via this tier include reporting of issues and resolutions, correspondence regarding certification and re-certification, advice regarding information and communications technology (ICT), data assurance and other reporting.
Tier 3 Data Exchange	The packaging and delivery of data packages, comprising data records and enrolment-related artefacts. Data packages have several uses which include data analysis by the recipient, data assurance, and for research purposes.

B   Data Element Reference Values

Refer to the following when entering values into data elements for Scheme or Authority Code – for example, in an enrolment report or enrolment form.

Table B.1: Scheme Name and Authority Code

Scheme Name (full)	Scheme Data Element Value (e.g. for enrolment form or report)	Authority Code
TMA HPLV Monitoring Scheme (VIC)	TMAHPLVVIC	VIC