Transport Certification Australia

TMA Telematics Positional Accuracy Assurance (TPAA) Scheme

A scheme using the Telematics Monitoring Application (TMA) to provide assurance in calculating Fuel Tax Credits

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Transport Certification Australia Ltd
T: +61 3 8601 4600
E: tca@tca.gov.au
W: www.tca.gov.au
ABN 83 113 379 936

About Us

Transport Certification Australia (TCA) is a centre of excellence within Austroads, responsible for assessing and recognising telematics and other vehicle-based technologies. Through its administration of the National Telematics Framework, TCA helps Australian and New Zealand transport agencies collect data from vehicles in ways that are trusted by government and industry, and to provide data and analytical services that enable improved road outcomes.

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1 Introduction

1.1 Purpose

This document describes the TMA Telematics Positional Accuracy Assurance (TPAA) Scheme ('the scheme').

The scheme uses the Telematics Monitoring Application (TMA) to deliver independent assurance over telematics systems and services used to calculate fuel tax credits (FTC).

1.2 Scope

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

The following information is included:

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

1.3 Background

This non-regulatory scheme is part of a new TPAA Service offered by TCA which has been developed to form the basis of a Product Ruling submission to the Australian Tax Office (ATO).

The TPAA Service builds on TCA's existing telematics assurance processes, which assess and verify the positional accuracy of telematics devices, their in-service performance, and the management of data collected from telematics devices by certified Application Service Providers (ASP).

The TPAA Service operates on three key principles:

- The ATO recognises the Service through a Product Ruling
- The ATO recognises telematics systems and services which are certified and audited through the Service by TCA
- TCA offers FTC Participants such as tax agents the option of using the Service to demonstrate the positional accuracy credentials of telematics systems and services used for the calculation of FTCs.

The TPAA Service provides an option for tax agents to streamline applications to the ATO for FTC Product Rulings which involve the use of telematics systems and services.

For more information on the TPAA Service and its relationship to the ATO Product Ruling, see *Telematics Positional Accuracy Assurance (TPAA) Service*.

As part of the TPAA Service, the scheme focuses exclusively on the positional accuracy and integrity of position data derived from telematics devices and services. Other elements of a Product Ruling which relate to the calculation of FTC are not included in the scope of the scheme.

The scheme uses the Telematics Monitoring Application (TMA), which operates within the National Telematics Framework (NTF) at Level 2 Assurance (see Appendix A for a definition of Level 2 Assurance).

Note: 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.

ASPs must be certified by TCA to offer the scheme to transport operators ('Operators'). To operate under the scheme, Operators must enrol vehicles into the scheme with an ASP.

Data is collected from vehicles fitted with TCA-approved telematics devices. ASPs provide data to TCA. TCA audits the data collected from vehicles enrolled in the scheme to assess and verify the positional accuracy of the data of certified ASPs offering the scheme to Operators.

1.4 References

Transport Certification Australia (TCA) 2023. *Telematics Positional Accuracy Assurance (TPAA) Service*. Transport Certification Australia. Melbourne.

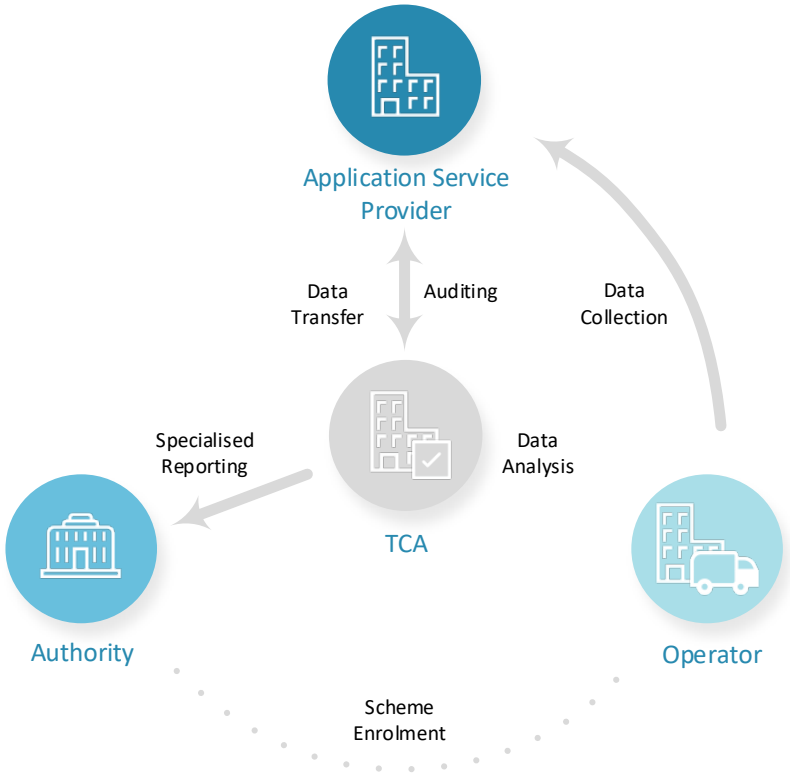
2 TMA Telematics Positional Accuracy Assurance (TPAA) Scheme

2.1 Participants

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

- 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 in 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 NTF), 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 analysis, audits ASPs and their data, and makes standard and specialised reporting available to the Authority 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 enrolment steps for the scheme.

Figure 3 shows the data collection and reporting processes for the scheme.

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

Note: See Appendix B, Table B.1, 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 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, and
- Date and time data.

d. Data Transfer

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. Auditing

As shown in Figure 3, TCA audits certified ASPs against the functional and technical requirements that an ASP must meet in order to be certified by TCA to provide services for the TMA application and the scheme.

f. Data Analysis and Reporting

TCA does not provide regular reports to the Authority for this scheme. Instead, information related to vehicles enrolled in the scheme is confirmed and provided only upon request of the Authority.

2.3 Key Scheme Processes

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

Note: This process assumes that TCA has already certified the ASP to provide TMA application services, and that the ATO has granted approval to the FTC Participant for an FTC Product Ruling with an ASP using the scheme.

Figure 2: Vehicle Enrolment Process

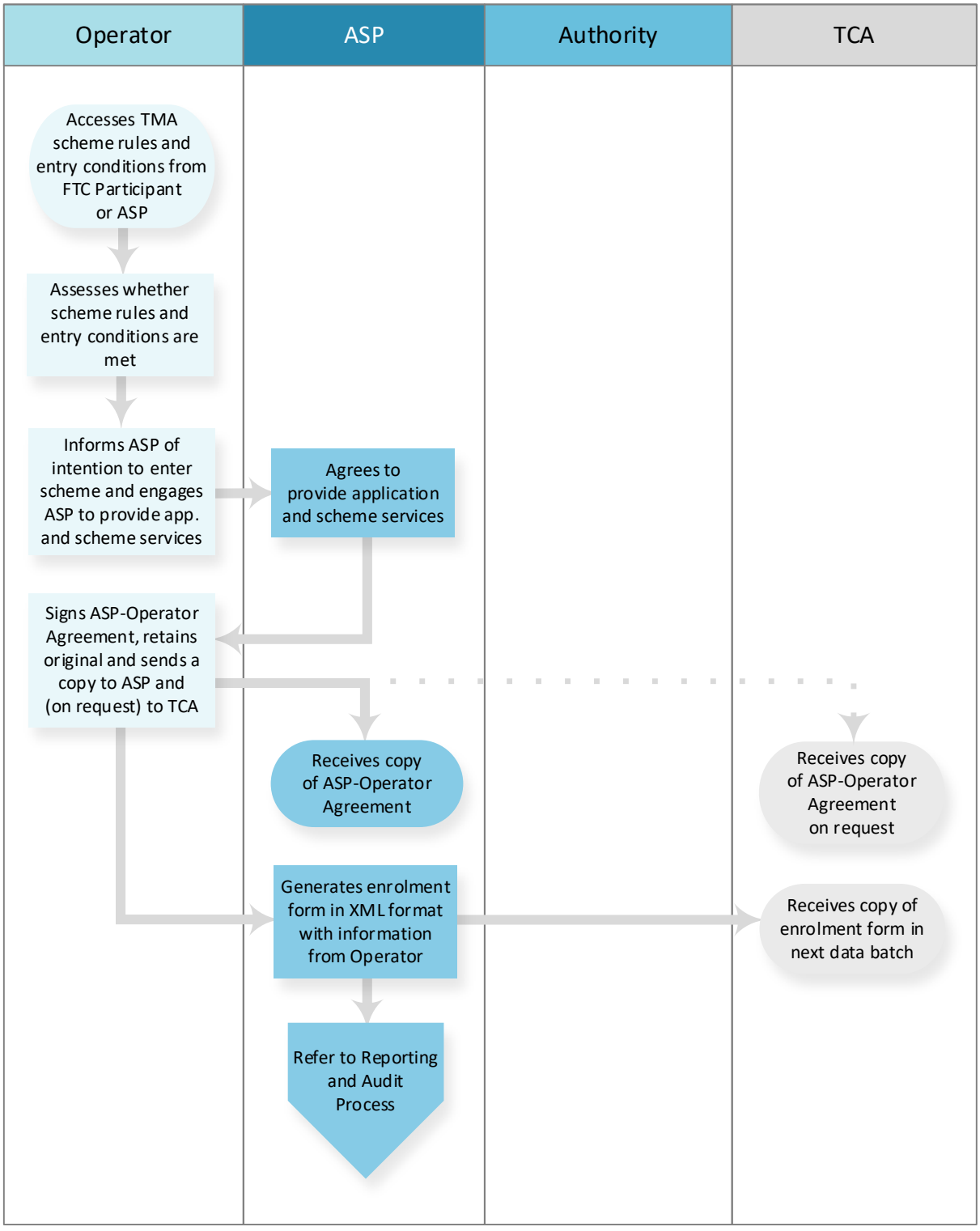
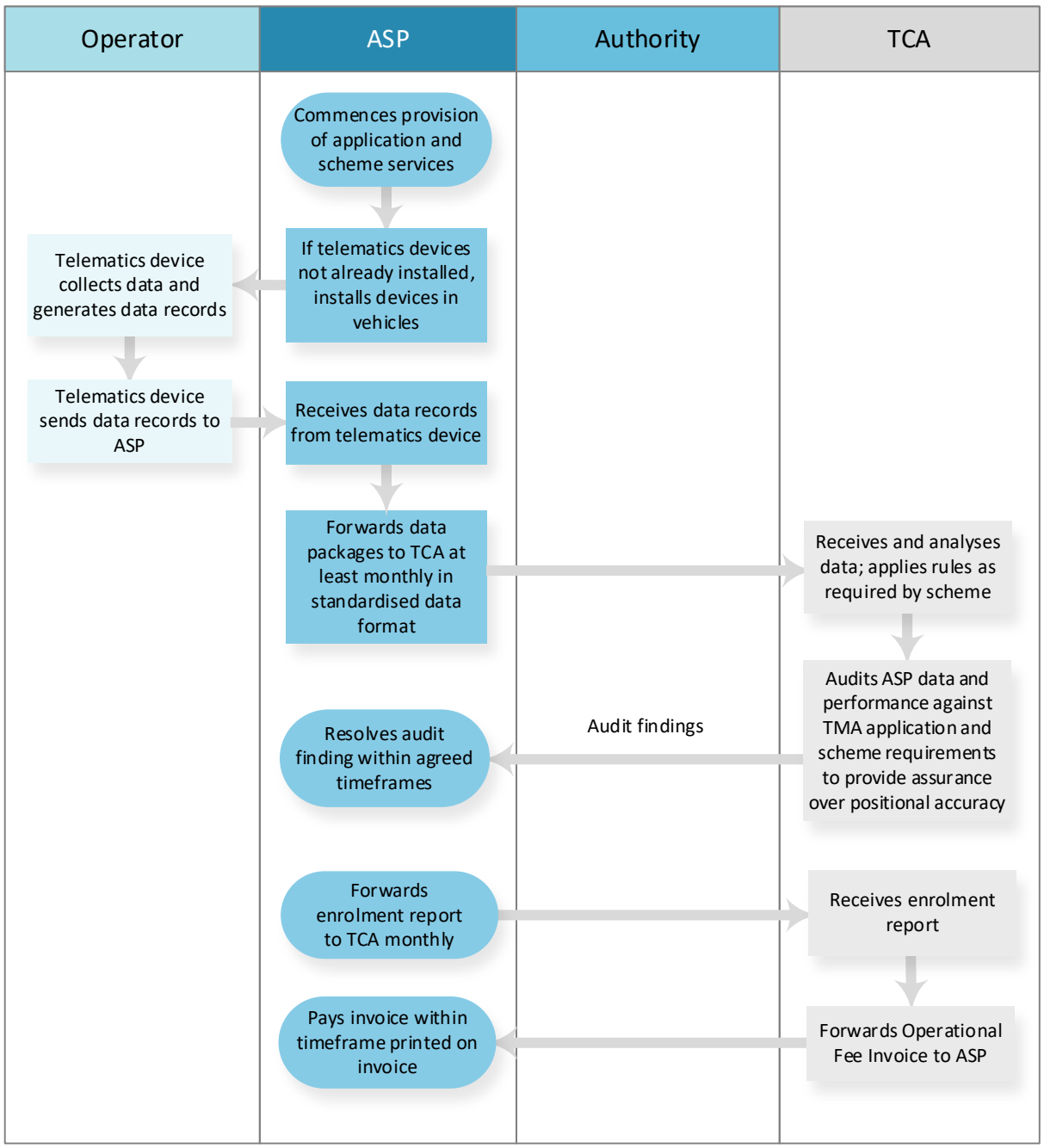


Figure 3 outlines the key actions related to data collection, record generation, audit and reporting processes for the scheme.

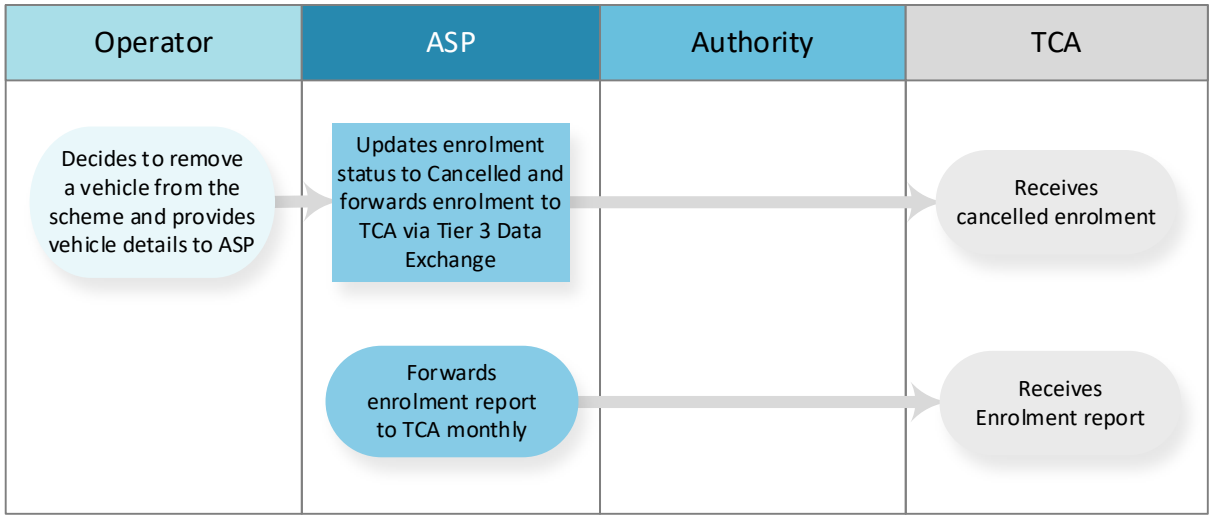
Figure 3: Data Collection, Audit and Reporting Processes



Cancellation of enrolment is initiated by the Operator and performed by the ASP.

Figure 4 outlines the key actions to discontinue enrolment of a vehicle in the scheme.

Figure 4: Enrolment Cancellation and Reporting Processes



2.4 Roles and Responsibilities

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

- Provide a document describing the use of the TPAA Service
- 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 JSON
- Support the reporting of enrolment forms and enrolment reports using a RESTful API, with these documents formatted using XML
- Inform ASPs of the 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 ASPs to access information generated by the scheme (in accordance with the intended purpose as agreed by the Operator in the ASP–Operator Agreement), such as any malfunctions associated with vehicles enrolled in the scheme
- Maintain the cloud environment and databases, etc. for receipt of data records 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 whether an ASP meets requirements to provide TMA 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
- After the end of each month, forward Operational Fee Invoices to ASPs upon receipt of enrolment reports

  Note: There is no Operational Fee if a vehicle enrolled in this scheme is also enrolled in another scheme of the TMA application. If the vehicle is not already enrolled in another scheme of the TMA application, contact TCA for more information on the Operational Fee.
- 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
- Notify the ASP when audit findings show issues with the ASP's data or performance that must be resolved within agreed timeframes
- Provide the Authority with reporting on request as described in 2.2f
- 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:

- As necessary, review the performance of TCA in relation to the operation of the Service and the execution of its responsibilities to deliver Service objectives.

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 in the scheme, 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
- 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
- Resolve audit findings received from TCA on ASP's data or performance within agreed timeframes.

Operators will:

- Access scheme rules and entry conditions from FTC Participants (such as tax agents) or ASPs and determine whether they meet those conditions
- 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 TMA 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)
- Install telematics devices and 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
ATO	Australian Taxation Office
FTC	fuel tax credit
GNSS	Global Navigation Satellite System
NTF	National Telematics Framework
TAP	Telematics Analytics Platform
TMA	Telematics Monitoring Application
TPAA	Telematics Positional Accuracy Assurance
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 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–TCA Certification Agreement	The written agreement made between an ASP and TCA that recognises the fact that the ASP, having satisfied TCA's requirements for appointment as an ASP, is appointed in that capacity, and sets out the legal obligations of each party with respect to the ongoing role of the ASP.
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.
assurance	The ability to use and rely on telematics data for the intended purpose. In the case of the TPAA Service, assurance refers to the ability of FTC Participants (or other entities) and the ATO to rely on positional data derived from GNSS for the calculation of fuel tax credits (FTC).

Term	Definition
audit	In the context of telematics, the process of doing one or more of the following: • Reviewing telematics information held by an ASP to assess whether the information is accurate, complete and up to date • Reviewing the processes by which telematics information held by an ASP is generated, recorded, stored, displayed, analysed, transmitted and reported • Examining how telematics information held by an ASP is used and disclosed by the ASP • Examining the output and in-service operation of an ASP, a type-approved device; the ASP System; its Quality System, and all incidental equipment and systems used by it.
Authority	An entity, associated with a jurisdiction, responsible for the administration of one or more NTF applications, and compliance activities as necessary. 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.
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.
FTC Participant	An entity involved in the calculation of FTC credits. This may include tax agents, telematics providers (which offer an FTC service), or telematics suppliers – any entity that offers an FTC service.
Global Navigation Satellite System (GNSS)	Several networks of satellites that transmit high-frequency radio signals containing time and distance data that can be picked up by a receiver, allowing the user to identify the location of the receiver anywhere around the globe.
jurisdiction	A geographical area containing a road network (i.e. typically an Australian state or territory).
Level 2 Assurance	Independent assessment of specific elements of a telematics application. Telematics data is combined with other data sources.
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.
non-regulatory	In relation to the NTF, any method whereby an Authority seeks to provide a service, other than by imposing a legislative or regulatory requirement.
Operator	An entity that operates one or more vehicles eligible to enter a scheme.

Term	Definition
scheme	The generic term for a specific use of an application linked to delivering a policy objective.
self-declaration	The self-declaration of data by an Operator and/or its nominated representative to the ASP.
Telematics Positional Accuracy Assurance (TPAA) Service	The service offered by TCA to providers of telematics services and devices, to assess and verify the positional accuracy of telematics devices, in-service function, and data collection and processing.
telematics device	The primary telematics unit which monitors vehicle parameters, which may include identity, datetime, location, speed, vehicle category or mass.
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.
type-approval	The outcome of the process by which TCA assesses and approves a device by 'type' against a set of functional and technical requirements.

B Data Element Reference Values

For the scheme, 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: TMA Scheme Name and Authority Code

Scheme Name (full)	**Scheme Data Element Value** (e.g. for enrolment form or report)	**Authority Code Data Element Value**
TMA Telematics Positional Accuracy Assurance (TPAA) Scheme	TMATPAA	ATO

Contact

Transport Certification Australia
Level 17, 360 Elizabeth Street
Melbourne VIC 3000

Phone: + 61 3 8601 4600
Email: tca@tca.gov.au
Website: www.tca.gov.au