Technical Specification

ISO/TS 7815-2

First edition
2025-01

Intelligent transport systems — Telematics applications for regulated commercial freight vehicles (TARV) using ITS stations —

Part 2:
Specification of the secure vehicle interface

Systèmes de transport intelligents — Cadre pour applications télématiques collaboratives pour véhicules de fret commercial réglementé (TARV) via les stations ITS —

Partie 2: Spécification de l'interface sécurisée du véhicule

</>

ISO/TS 7815-2:2025(en)

COPYRIGHT PROTECTED DOCUMENT

Contents

Page

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO document should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

ISO draws attention to the possibility that the implementation of this document may involve the use of (a) patent(s). ISO takes no position concerning the evidence, validity or applicability of any claimed patent rights in respect thereof. As of the date of publication of this document, ISO had not received notice of (a) patent(s) which may be required to implement this document. However, implementers are cautioned that this may not represent the latest information, which may be obtained from the patent database available at www.iso.org/patents. ISO shall not be held responsible for identifying any or all such patent rights.

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 204, *Intelligent transport systems*.

A list of all parts in the ISO 7815 series can be found on the ISO website.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Introduction

Many intelligent transport system (ITS) technologies have been embraced by commercial transport operators and freight owners in the areas of fleet management, safety and security. Telematics applications have also been developed for governmental use. Such regulatory services in use or under consideration vary from region to region, but include electronic on-board recorders, vehicle charging, digital tachograph, on-board mass monitoring, emissions monitoring, vehicle access monitoring, hazardous goods tracking and eCall. Additional applications with a regulatory impact currently under development include fatigue management, speed monitoring and heavy vehicle charging based on mass, location, distance and time.

In this emerging environment of regulatory and commercial applications, between 2008 and 2012, ISO 15638-1 was developed and approved, enabling on-board equipment and back-office systems to be commercially designed in an open market, meeting the common requirements of jurisdictions. The ISO 15638-1 architecture routes responses via an application service provider who validates the destination before providing the data.

While the TARV (telematics applications for regulated commercial freight vehicles) ISO 15638 series remains valid and appropriate in many cases, it is now appropriate to also enable the direct transfer of data using a secure interface. ISO/TS 7815-1 provides, within the TARV paradigm, the specification of the architecture and framework for the direct transfer of data using a "secure vehicle interface" within which these transactions can be undertaken, without the use of an application service provider as an intermediary.

The trust relation between two devices is illustrated in Figure 1. Two devices cooperate in a trusted way, i.e. exchange information with optional explicit bi-directional protection, in secure application sessions, thus only using access data or request data that it has the appropriate credentials for access.
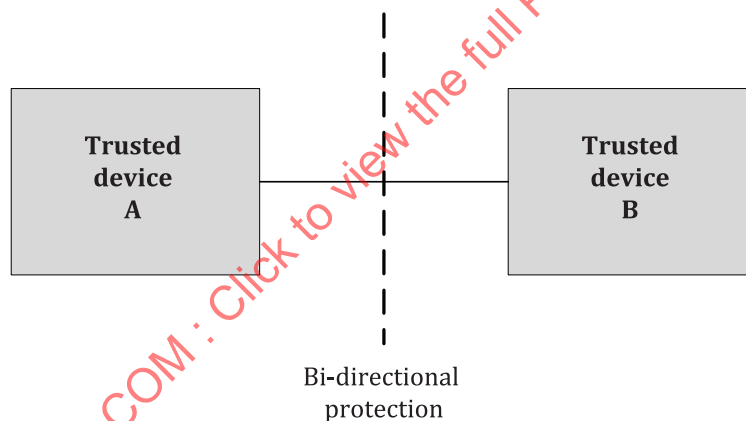

Figure 1 — Interconnection of trusted devices (ISO 21177)

Intelligent transport systems — Telematics applications for regulated commercial freight vehicles (TARV) using ITS stations —

Part 2: Specification of the secure vehicle interface

1 Scope

This document specifies the requirements for a secure interface for the provision of telematics applications for regulated commercial freight vehicles (TARV) application services data to jurisdictions and other relevant parties within the following scenarios:

a) a secure credential management system (SCMS) already exists for ITS data management and access in the location of the service provision;

b) an SCMS does not yet exist for ITS data management and access in the location of the service provision.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO/TS 5616, *Intelligent transport systems — Secure interfaces governance — Minimum requirements and governance procedures*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at https://www.electropedia.org/

3.1
secure interface
cybersecure bidirectional communication connection (wired or wireless) between two entities known as "ITS-stations"

Note 1 to entry: See ISO 21217 for a definition of ITS stations.

[SOURCE: ISO/TS 5616:2024, 3.1.16, modified — Note 1 to entry has been deleted and replaced with a new Note 1 to entry.]

3.2
secure vehicle interface
secure interface in which at least one of the parties is a connection to a vehicle

[SOURCE: ISO/TS 5616:2024, 3.1.17]

4   Abbreviated terms

3G	3rd generation mobile telephone communications -circuit switched (3GPP release 8, UMTS)
4G	4th generation mobile telephone communications -packet switched (3GPP release 14, LTE)
5G	5th generation mobile telephone communications -packet switched (3GPP release 17, SRE)
ITS	intelligent transport system
LTE	long term evolution (4G)
PMC	policy management committee
RGMC	regional governance management committee
SCMS	secure credential management system
SRE	strong radio evolution (5G)
TARV	telematics applications for regulated commercial freight vehicles
UMTS	universal mobile telecommunications service (3G)

5   Secure vehicle interface requirements where an SCMS for ITS data management and access already exists

5.1   Suitability for use

An SCMS shall be considered suitable for use as a secure vehicle interface if it conforms to ISO/TS 5616 and the SCMS provider admits the application to its governance.

5.2   Architecture and framework

The system shall operate within the architecture and framework specified in ISO/TS 5616.

5.3   Application service

The operation and protocols for specific application services are specified in the ISO 15638 series. Further specification will potentially be provided in a subsequent part of the ISO 7185 series.

6   Secure vehicle interface requirements where an SCMS for ITS data management and access does not already exist

6.1   Establishment and operation of an SCMS for the required application service

Where no SCMS that conforms to ISO/TS 5616 and that is accessible to the application service exists, it is first necessary to create such a service in accordance with the principles of ISO/TS 5616 and its provisions on governance. The service can be either as general ITS data management and access service, or a more limited instantiation, limited to the scope of paradigm of the required application service, or a group of ITS applications with similar requirements. In this event, the different applications shall be governed by a policy management committee (PMC) as defined in ISO/TS 5616, and the coordinating governance between applications shall follow the provisions concerning the regional governance management committee (RGMC) in ISO/TS 5616.

6.2   Architecture and framework

The system shall operate within the architecture and framework specified in ISO/TS 5616.

6.3   Communications media supported

ISO/TS 5616 enables and specifies the requirements for support of application services using 3G UMTS, 4G LTE, G5 (IEEE 802.11p), and 5G SRE communications media. In the case where an SCMS specific to one or a group of application services is created specifically for one or more application services, the application service specification (see 6.4) shall specify which of these media are supported for the provision of that application service. The selected communications medium/media shall meet the requirements specified for that medium/those media in ISO/TS 5616.

6.4   Application service

The operation and protocols for specific application services are specified in the ISO 15638 series. Further specification will potentially be provided in a subsequent part of the ISO 7185 series.