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**Intelligent transport systems —  
Framework for collaborative Telematics  
Applications for Regulated commercial  
freight Vehicles (TARV) —**

Part 3:

**Operating requirements, “Approval  
Authority” procedures, and enforcement  
provisions for the providers of regulated  
services**

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*Systèmes intelligents de transport — Cadre pour applications  
télématiques collaboratives pour véhicules de fret commercial  
réglementé (TARV) —*

*Partie 3: Exigences de fonctionnement, modes opératoires de l'Autorité  
d'approbation et dispositions d'exécution pour les fournisseurs de  
services réglementés*



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## 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 documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2. [www.iso.org/directives](http://www.iso.org/directives)

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

The committee responsible for this document is ISO/TC 204, *Intelligent transport systems*

ISO 15638 consists of the following parts, under the general title *Intelligent transport systems — Framework for collaborative Telematics Applications for Regulated commercial freight Vehicles (TARV)*:

- *Part 1 Framework and architecture*
- *Part 2: Common platform parameters using CALM*
- *Part 3: Operating requirements, 'Approval Authority' procedures, and enforcement provisions for the providers of regulated services*
- *Part 5: Generic vehicle information*
- *Part 6: Regulated applications* [Technical Specification]
- *Part 7: Other applications*
- *Part 8: Vehicle access monitoring (VAM)* [Technical Specification]
- *Part 9: Remote electronic tachograph monitoring (RTM)* [Technical Specification]
- *Part 10: Emergency messaging system/eCall (EMS)* [Technical Specification]
- *Part 11: Driver work records (work and rest hours compliance) (DWR)* [Technical Specification]
- *Part 12: Vehicle mass monitoring (VMM)* [Technical Specification]
- *Part 14: Vehicle access control (VAC)* [Technical Specification]
- *Part 15: Vehicle location monitoring (VLM)* [Technical Specification]

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- *Part 16: Vehicle speed monitoring (VSM)* [Technical Specification]
- *Part 17: Consignment and location monitoring (CLM)* [Technical Specification]
- *Part 18: ADR (Dangerous Goods) transport monitoring (ADR)* [Technical Specification]
- *Part 19: Vehicle parking facilities (VPF)* [Technical Specification]

The following parts are under preparation:

- *Part 4: System security requirements* [Technical Specification]
- *Part 13: Mass Penalties and Levies (VMC)*

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## Introduction

Many 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 being considered varies from country to country, but include vehicle charging, digital tachograph, electronic on-board recorders, on-board mass monitoring, vehicle access monitoring, hazardous goods tracking and e-call. Additional applications with a regulatory impact being developed include, fatigue management, speed monitoring and heavy vehicle charging based on mass, location, distance and time.

In such an emerging environment of regulatory and commercial applications, it is timely to consider an overall architecture (business and functional) that could support these functions from a single platform within a commercial freight vehicle that operate within such regulations. International Standards will allow for a speedy development and specification of new applications that build upon the functionality of a generic specification platform. A suite of standards deliverables is required to describe and define the framework and requirements so that the in-vehicle system and *back office* [4.7] systems can be commercially designed in an open market to meet common requirements of jurisdictions.

This suite of standards addresses and defines the framework for a range of cooperative telematics applications for *regulated commercial freight vehicles* [4.25] (such as access monitoring, driver fatigue management, speed monitoring, on-board mass monitoring and charging). The overall scope includes the concept of operation, legal and regulatory issues, and the generic cooperative provision of services to *regulated commercial freight vehicles* [4.25] using an on-board ITS platform. The framework is based on a (multiple) service provider oriented approach provisions for the *approval authority* [4.4] approval and auditing of *service providers* [4.27].

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This suite of standards deliverables will:

- provide the basis for future development of cooperative telematics applications for *regulated commercial freight vehicles* [4.25]. Many elements to accomplish this are already available. Existing relevant standards will be referenced, and the specifications will use existing standards (such as CALM) wherever practicable.
- allow for a powerful platform for highly cost-effective delivery of a range of telematics applications for *regulated commercial freight vehicles* [4.25].
- a business architecture based on a (multiple) service provider oriented approach
- address legal and regulatory aspects for the *approval authority* [4.4] approval and auditing of *service providers* [4.27].

This suite of standards deliverables is timely as many governments (Europe, North America, Asia and Australia/New Zealand) are considering the use of telematics for a range of regulatory purposes. Ensuring that a single in-vehicle platform can deliver a range of services to both government and industry through open standards and competitive markets is a strategic objective.

NOTE 1: The definition of what comprises a 'regulated' vehicle is regarded as an issue for national decision, and may vary from country to country. This suite of standards deliverables does not impose any requirements on nations in respect of how they define a regulated vehicle.

NOTE 2: The definition of what comprises a 'regulated' service is regarded as an issue for national decision, and may vary from country to country. This suite of standards deliverables does not impose any requirements on nations in respect of which services for regulated vehicles countries will require, or support as an option, but will provide standardised sets of requirements descriptions for identified services to enable consistent and cost efficient implementations where implemented.

NOTE 3: Cooperative ITS applications, in this context, are defined as the use of an in-vehicle ITS platform to meet both commercial and regulatory needs from a (functionally) single on-board platform.

This part of the ISO 15638 family of standards deliverables provides specifications for operating requirements, *approval authority* [4.4] approval procedures and enforcement provisions for the providers of regulated services.

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# Intelligent transport systems — Framework for collaborative Telematics Applications for Regulated commercial freight Vehicles (TARV) —

## Part 3: Operating requirements, “Approval Authority” procedures, and enforcement provisions for the providers of regulated services

### 1 Scope

This part of ISO 15638 defines provisions to enable monitoring and enforcement of regulated vehicles and *approval authority* [4.4] approval procedures, specifically:

- a) Definition of the roles and responsibilities of key entities: user, service provider, jurisdictions, and ‘Approval Authorities’
- b) Operating requirements ensuring that a cooperative in-vehicle platform can deliver a range of services to both government and industry through open standards and competitive markets
- c) Basic service requirements for *service providers* [4.27] that are generic and independent of a specific application
- d) Requirements for the *approval authority* [4.4] approval of *IVSs* and *service providers* [4.27]
- e) Legal, regulatory, and enforcement aspects.

The scope includes the requirements for the *IVS* capability in the vehicle, and the definition of the roles of the *service provider* [4.27], ‘Communications Service Provider’, *IVS installer* [4.16], ‘*IVS maintainer* [4.17]’, *approval authority* [4.4], and the *user* [4.31], for cooperative telematics applications for *regulated commercial freight vehicles* [4.25].

NOTE The specific ‘certification’ or ‘approval’ procedures for specific application services are a matter for the jurisdiction and are outside the scope of this (or any) part of ISO 15638. However, approval authorities and jurisdictions are recommended to use the guidance of ISO 17000 and ISO guide 65 when developing and implementing such procedures.

### 2 Conformance

This part of ISO 15638 defines requirements for provisions to enable monitoring and enforcement of regulated vehicles and *approval authority* [4.4] approval procedures within the *TARV* context, and has no specific conformance tests defined herein. Principal requirements for conformance tests are specified in 14, but the tests themselves are not elaborated. Some aspects defined within may have conformance tests defined in other parts of ISO 15638.

Conformance declarations for the various parts of a CALM-compliant system shall be based on the relevant CALM-related International Standards that are normatively referenced in ISO 15638-2.

Conformance to any other International Standard or specification referenced in this part of ISO 15638 shall be ascertained according to the requirements of the referenced deliverable.

Conformance to this part of ISO 15638 is therefore a matter of self-declaration of compliance, or by submission to a test house to ascertain that the provisions of the clauses of this part of ISO 15638 have been adhered to.

### 3 Normative references

The following referenced documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 11519-1	<i>Road vehicles — Low-speed serial data communication — Part 1: General and definitions</i>
ISO 11519-2	<i>Road vehicles — Low-speed serial data communication — Part 2: Low-speed controller area network (CAN)</i>
ISO 11519-3	<i>Road vehicles — Low-speed serial data communication — Part 3: Vehicle area network (VAN)</i>
ISO 11898-1	<i>Road vehicles — Controller area network (CAN) — Part 1: Data link layer and physical signalling</i>
ISO 11898-2	<i>Road vehicles — Controller area network (CAN) — Part 2: High-speed medium access unit</i>
ISO 11898-3	<i>Road vehicles — Controller area network (CAN) — Part 3: Low-speed, fault-tolerant, medium-dependent interface</i>
ISO 11898-4	<i>Road vehicles — Controller area network (CAN) — Part 4: Time-triggered communication</i>
ISO 11898-5	<i>Road vehicles — Controller area network (CAN) — Part 5: High-speed medium access unit with low-power mode</i>
ISO/TR 12859	<i>Intelligent transport systems — System architecture — Privacy aspects in ITS standards and systems</i>
ISO 14816	<i>Road transport and traffic telematics — Automatic vehicle and equipment identification — Numbering and data structures</i>
ISO 17262	<i>Intelligent transport systems — Automatic vehicle and equipment identification — Numbering and data structures</i>
ISO 26683-2	<i>Intelligent transport systems — Freight land conveyance content identification and communication — Part 2: Application interface profiles</i>
SAE J1939	<i>Recommended Practice for a Serial Control and Communications Vehicle Network</i>

### 4 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 15638-1 and the following apply.

#### 4.1 actor

coherent set of roles that users of an entity can play when interacting with the entity

NOTE An actor may be considered to play a separate role with regard to each use case with which it communicates. In the metamodel, Actor is a subclass of Classifier. An Actor has a Name and may communicate with a set of UseCases, and, at realization level, with Classifiers taking part in the realization of these UseCases. An Actor may also have a set of Interfaces, each describing how other elements may communicate with the Actor.

**4.2****applicant**

party which has applied for approval authority [4.4] approval as a service provider [4.27]

**4.3****application service**

service provided by a service provider accessing data from the IVS of a regulated commercial freight vehicle via a wireless communications network

**4.4****approval authority**

organization (usually independent) which conducts approval and ongoing *audit* [4.5] for *service providers* [4.27]

**4.5****audit**

review of a party's capacity to meet, or continue to meet, the initial and ongoing *certificate of approvals* [4.11] as a *service provider* [4.27]

**4.6****auditor**

person or organization approved as an auditor by an *approval authority* [4.4]

**4.7****back office**

generic term for the computing and communication facilities of a *service provider* [4.27] or an *approval authority* [4.4] or *jurisdiction regulator* [4.16]

**4.8****basic vehicle data**

data that shall be maintained/provided by all IVS (regardless of *jurisdiction* [4.18])

**4.9****CAN bus**

network designed for use in automotives

NOTE 1 It uses a single terminated twisted pair cable; is multi master; maximum signal frequency used is 1 Mbit/sec; length is typically 40M at 1Mbit/sec up to 10KM at 5Kbits/sec; it has high reliability with extensive error checking; typical maximum data rate achievable is 40KBytes/sec; maximum latency of high priority message <120 µsec at 1Mbit/sec.

NOTE 2 CAN is unusual in that the entities on the network, called nodes, are not given specific addresses. Instead, it is the messages themselves that have an identifier which also determines the messages' priority. For this reason there is no theoretical limit to the number of nodes although in practice it is ~64.

**4.10****certification**

formal affirmation that an *applicant* [4.2] has satisfied all the requirements for appointment as a *service provider* [4.27]

**4.11****certificate of approval**

written agreement made between an *approval authority* [4.4] and a *service provider* [4.27]

NOTE An *approval authority* [4.4] approval agreement recognizes the fact that a *service provider* [4.27], having satisfied the '*approval authority's*' requirements for appointment as a *service provider*, is appointed in that capacity, and sets out the legal obligations of the parties with respect to the on-going role of the *service provider*.

**4.12****clear-down****call clear-down**

termination of call and freeing up of communication channel