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Intelligent transport systems — Framework for cooperative telematics applications for regulated vehicles (TARV) —

Part 12: Vehicle mass monitoring

Systèmes intelligents de transport — Cadre pour applications télématiques coopératives pour véhicules réglementés (TARV) —

Partie 12: Monitorage de la masse des véhicules

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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 (see www.iso.org/directives).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

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

For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT) see the following URL: Foreword - Supplementary information

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

This first edition cancels and replaces ISO/TS 15638-12:2013.

ISO 15638 consists of the following parts, under the general title *Intelligent transport systems — Framework for cooperative telematics applications for regulated vehicles (TARV)*:

— *Part 1: Framework and architecture*

— *Part 2: Common platform parameters using CALM*

— *Part 3: Operating requirements, "Approval Authority" approval procedures, and enforcement provisions for the providers of regulated services*

— *Part 5: Generic vehicle information*

— *Part 6: Regulated applications*

— *Part 7: Other applications*

— *Part 8: Vehicle access management and monitoring (VAM)*

— *Part 9: Remote electronic tachograph monitoring (RTM)*

— *Part 10: Emergency messaging system/eCall (EMS)*

— *Part 11: Driver work records (work and rest hours compliance) (DWR)*

— *Part 12: Vehicle mass monitoring (VMM)*

— *Part 14: Vehicle access control (VAC)*

— *Part 15: Vehicle location monitoring (VLM)*

— *Part 16: Vehicle speed monitoring (VSM)*

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— *Part 17: Consignment and location monitoring (CLM)*

— *Part 18: ADR (Dangerous Goods) transport monitoring (ADR)*

— *Part 19: Vehicle parking facilities (VPF)*

The following documents are under preparation:

— *Part 4: System security requirements*

— *Part 13: 'Mass' information for jurisdictional control and enforcement*

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Introduction

Many ITS technologies have been embraced by commercial transport *operators* (4.35) and freight owners, in the areas of fleet management, safety, and security. *Telematics* (4.47) applications have also been developed for governmental use. Such regulatory services in use or being considered vary from *jurisdiction* (4.29) to *jurisdiction* (4.29), but include electronic on-board recorders, digital *remote tachograph monitoring* (4.41), on-board *mass* (4.33) monitoring, "mass" data for regulatory control and management, vehicle *access* (4.1) methods, hazardous goods, and tracking and *e-call* (4.20). Additional applications with a regulatory impact being developed include, fatigue management, speed monitoring, and heavy vehicle penalties and levies imposed.

In such an emerging environment of regulatory and *commercial applications* (4.13), it is timely to consider an overall *architecture* (4.9) (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* (4.44) of new applications that build upon the functionality of a generic *specification* (4.44) platform. A suite of International Standards deliverables is required to describe and define the *framework* (4.23) and requirements so that the on-board equipment and back office systems can be commercially designed in an open market to meet common requirements of *jurisdictions* (4.30).

This suite of International Standards addresses and defines the *framework* (4.23) for a range of cooperative *telematics* (4.47) applications for *regulated commercial freight vehicles* (4.39) [such as, *access methods* (4.1), *driver* (4.18) fatigue management, speed monitoring, on-board mass, "mass" data for regulatory control, and management]. The overall scope includes the concept of operation, legal and regulatory issues, and the generic cooperative provision of services to *regulated commercial freight vehicles* (4.40), using an on-board ITS platform. The *framework* (4.23) is based on a (multiple) *service provider* (4.42) oriented approach with provisions for the *approval* (4.6) and *auditing* (4.10) of *service providers* (4.42).

This suite of International Standards deliverables will

— provide the basis for future development of cooperative *telematics* (4.47) applications for *regulated vehicles* (4.40). Many elements to accomplish this are already available. Existing relevant International Standards will be referenced, and the *specifications* (4.44) will use existing International Standards [such as *CALM* (4.12)] wherever practicable,

— allow for a powerful platform for highly cost-effective delivery of a range of *telematics* (4.47) applications for *regulated vehicles* (4.40),

— provide a business *architecture* (4.9) based on a (multiple) *service provider* (4.42) oriented approach, and

— address legal and regulatory aspects for the *approval* (4.6) and *auditing* (4.10) of *service providers* (4.42).

This suite of International Standards deliverables is timely as many governments (Europe, North America, Asia, and Australia/New Zealand) are considering the use of *telematics* (4.47) 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.

This part of ISO 15638 provides *specifications* (4.44) for *vehicle* "*mass*" *monitoring* (4.52).

NOTE 1 The definition of what comprises a "*regulated*" *vehicle* (4.40) is regarded as an issue for national decision, and can vary from *jurisdiction* (4.29) to *jurisdiction* (4.29). This suite of International Standards deliverables does not impose any requirements on nations in respect of how they define a *regulated vehicle* (4.40).

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NOTE 2 The definition of what comprises a “regulated” service is regarded as an issue for national decision, and can vary from *jurisdiction* (4.29) to *jurisdiction* (4.29). This suite of International Standards deliverables does not impose any requirements on nations in respect of which services for *regulated vehicles* (4.40) *jurisdictions* (4.29) will require, or support as an option, but will provide standardized sets of requirements descriptions for identified services to enable consistent and cost-efficient implementations where implemented.

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Intelligent transport systems — Framework for cooperative telematics applications for regulated vehicles (TARV) —

Part 12:
Vehicle mass monitoring

1 Scope

This part of ISO 15638 addresses the provision of *vehicle mass monitoring* (VMM) (4.52) and specifies the form and content of such data required to support such systems, and *access methods* (4.1) to that data.

The scope of this part of ISO 15638 is to provide *specifications* (4.44) for common communications and data exchange aspects of the *application service* (4.3) *VMM* (4.53) that a *regulator* (4.30) can elect to require or support as an option, including the following

a) high level definition of the service that a *service provider* (4.42) has to provide, (The service definition describes common service elements; but does not define the detail of how such an *application service* (4.3) is instantiated, not the acceptable value ranges of the data concepts defined),

b) means to realize the service, and

c) application data, naming content and quality that an *IVS* (4.26) has to deliver.

The definition of what comprises a "regulated" service is regarded as an issue for national decision, and can vary from *jurisdiction* (4.29) to *jurisdiction* (4.29). This International Standard does not impose any requirements on nations in respect of which services for *regulated commercial freight vehicles* (4.40) *jurisdictions* (4.29) will require, or support as an option, but provides standardized sets of requirements descriptions for identified services to enable consistent and cost-efficient implementations where instantiated.

ISO 15638 has been developed for use in the context of *regulated commercial freight vehicles* (4.40) (hereinafter, referred to as "*regulated vehicles*" (4.40). There is nothing, however, to prevent a *jurisdiction* (4.29) extending or adapting the scope to include other types of *regulated vehicles* (4.40), as it deems appropriate.

2 Conformance

Requirements to demonstrate conformance to any of the general provisions or specific *application services* (4.3) described in this part of ISO 15638 shall be within the regulations imposed by the *jurisdiction* (4.29) where they are instantiated. Conformance requirements to meet the provisions of this International Standard are therefore deemed to be under the control of, and to the *specification* (4.44) of, the *jurisdiction* (4.29) where the *application service(s)* (4.3) is/are instantiated.

The protocols defined in this part of ISO 15638 have been independently tested. Annex B provides results of these tests.

In any conformance assurance process undertaken by candidate systems, the results can be used, where appropriate, as part of its process of conformance compliance.

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3 Normative references

The following 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 15638–1:2012, *Intelligent transport systems — Telematics Applications for Regulated commercial freight Vehicles (TARV) — Part 1: Framework and architecture*

ISO 15638–2:2013, *Intelligent transport systems — Telematics Applications for Regulated commercial freight Vehicles (TARV) — Part 2: Common platform parameters using CALM*

ISO 15638–3:2013, *Intelligent transport systems — Telematics Applications for Regulated commercial freight Vehicles (TARV) — Part 3: Operating requirements, "Approval Authority" approval procedures, and enforcement provisions for the providers of regulated services*

ISO 15638–5:2013, *Intelligent transport systems — Telematics Applications for Regulated commercial freight Vehicles (TARV) — Part 5: Generic vehicle information*

ISO 15638–6:2014, *Intelligent transport systems — Telematics Applications for Regulated commercial freight Vehicles (TARV) — Part 6: Regulated applications*

4 Terms and definitions

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

4.1
access methods
procedures and protocols to provision and retrieve data

4.2
app
small (usually) Java™[1)] applets, organized as software bundles, that support *application services* (4.3) by keeping the *data pantry* (4.17) provisioned with up-to-date data

4.3
application service
service provided by a *service provider* (4.42) enabled by accessing data from the *in-vehicle system* (IVS) (4.26) of a *regulated vehicle* (4.40) via a wireless communications network

4.4
application service provider (ASP)
party that provides an *application service* (4.3)

4.5
app library
separated secure area of memory in *IVS* (4.26) where apps are stored, with different access controls to *data pantry* (4.17)

4.6
approval
formal affirmation that an applicant has satisfied all the requirements for appointment as an *application service provider* (4.4) or that an *application service* (4.3) delivers the required service levels

1) This information is given for the convenience of users of this document and does not constitute an endorsement by ISO.

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