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

Part 6: Regulated applications

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

Partie 6: Applications réglementées

Reference number
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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 15638-6:2013.

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' 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*

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

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

— *Part 11: Driver work records*

— *Part 12: Vehicle mass monitoring*

— *Part 14: Vehicle access control*

— *Part 15: Vehicle location monitoring*

— *Part 16: Vehicle speed monitoring*

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— *Part 17: Consignment and location monitoring*

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

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

The following parts are under preparation:

— *Part 4: System security requirements*

— *Part 13: Mass Penalties and Levies (VMC)*

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Introduction

Many ITS technologies have been embraced by commercial transport *operators (4.43)* and freight owners, in the areas of fleet management, safety and security. *Telematics (4.54)* applications have also been developed for governmental use. Such regulatory services in use or being considered vary from *jurisdiction (4.37)* to *jurisdiction*, but include electronic on-board recorders, collection of penalties and levies, digital *tachograph (4.53)*, on-board *mass (4.41)* monitoring, vehicle *access (4.1) methods*, hazardous goods tracking and eCall *(4.27)*. Additional applications with a regulatory impact being developed include, fatigue management, speed monitoring, and measurement of *mass*, location, distance, and time.

In such an emerging environment of regulatory and *commercial applications (4.18)*, it is timely to consider an overall *architecture (4.12)* (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 (4.52)* 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 (4.30)* 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 (4.37)*.

This International Standard addresses and defines the *framework (4.30)* for a range of cooperative *telematics (4.54)* applications for *regulated commercial freight vehicles (4.47)*, such as *access methods (4.2)*, driver *f*atigue management, speed monitoring, and on-board *mass (4.41)* monitoring. The overall scope includes the concept of operation, legal and regulatory issues, and the generic cooperative provision of services to *regulated commercial freight vehicles*, using an on-board ITS platform. The *framework* is based on a (multiple) *service provider (4.50)* oriented approach with provisions for the *approval (4.10)* and *auditing (4.13)* of *service providers*.

This International Standard

— provides the basis for future development of cooperative *telematics (4.54)* applications for *regulated commercial freight vehicles (4.47)*. Many elements to accomplish this are already available. Existing relevant standards will be referenced, and the *specifications (4.52)* will use existing standards (such as *CALM*) wherever practicable,

— allows for a powerful platform for highly cost-effective delivery of a range of *telematics* applications for *regulated commercial freight vehicles*,

— provides a business *architecture (4.12)* based on a (multiple) *service provider (4.50)* oriented approach, and

— addresses legal and regulatory aspects for the *approval (4.10)* and *auditing (4.13)* of *service providers.*

This International Standard is timely as many governments (Europe, North America, Asia, and Australia/New Zealand) are considering the use of *telematics (4.54)* 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 general *specifications (4.52)* for communications and data exchange aspects of candidate *regulated applications (4.45)* which are specified in ISO 15638-8 to ISO 15638-19 (at the time of developing this part of ISO 15638, but further parts may be added later if a requirement for additional regulated applications to be standardized are identified), the selection and implementation for all or any of which remain a decision for the implementing *jurisdiction (4.37)*.

NOTE 1 The definition of what comprises a 'regulated' vehicle is regarded as an issue for national decision and might vary from *jurisdiction (4.37)* to *jurisdiction*. This International Standard does not impose any requirements on nations in respect of how they define a *regulated vehicle (4.47)*.

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NOTE 2 The definition of what comprises a 'regulated' service is regarded as an issue for national decision, and might vary from *jurisdiction (4.37)* to *jurisdiction*. This International Standard does not impose any requirements on nations in respect of which services for *regulated vehicles (4.47) jurisdictions* 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 collaborative Telematics Applications for Regulated commercial freight Vehicles (TARV) —

Part 6: Regulated applications

1 Scope

This part of ISO 15638 specifies the common roles and responsibilities of actors providing *regulated application (4.45)* systems which use *TARV* to provide *regulated application services (4.46)* for *regulated commercial freight vehicles (4.47)* and the interoperability of key operational steps and actions required to support all *TARV regulated application service* systems.

This part of ISO 15638 specifies the general conditions for data exchanges between an *application service provider (4.7)* and vehicle *IVS (4.32)*, and from other *ITS-stations (4.34)* to the *IVS* of the *regulated commercial freight vehicle (4.47)*, and specifies generic data concepts for identified services, but it does not define the detailed aspects of the *application services (4.6)* or their implementation (application specific aspects being defined in ISO 15638-8 to ISO 15638-19 for each identified application service).

This part of ISO 15638 addresses the general and common requirements for the provision of *regulated application services (4.46)* that require data in addition to, or instead of, *basic vehicle data (4.16)* and *core application data (4.23)* (application specific aspects being defined in ISO 15638-8 to ISO 15638-19 for each identified application service).

The scope of this part of ISO 15638 is to provide common aspects of *specifications (4.52)* for communications and data exchange aspects of identified *application services (4.6)* (as defined in ISO 15638-8 to ISO 15638-19) that a *regulator (4.38)* may elect to require or support as an option, including

a) high-level definition of the service that a *service provider (4.50)* has to provide [the service definition describes common service elements; but does not define the detail of how such an *application service (4.6)* is instantiated, not the acceptable value ranges of the data concepts defined],

b) means to realize the service, and

c) application data common to all parts as defined in ISO 15638-8 to ISO 15638-19, naming content and quality that an *IVS (4.32)* has to deliver.

The definition of what comprises a 'regulated' service is regarded as an issue for national decision and may vary from *jurisdiction (4.37)* to *jurisdiction*. This International Standard does not impose any requirements on nations in respect of which services for *regulated commercial freight vehicles jurisdictions* 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 [hereinafter referred to as 'regulated vehicles' *(4.47)*]. There is nothing however to prevent a jurisdiction extending or adapting the scope to include other types of regulated vehicles, as it deems appropriate.

2 Conformance

Requirements to demonstrate conformance to any of the general provisions or specific *application services (4.6)* described in this part of ISO 15638 shall be within the regulations imposed by the *jurisdiction (4.37)* where they are instantiated. Conformance requirements to meet the provisions of

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this International Standard are therefore deemed to be under the control of, and to the specification of, the *jurisdiction* where the *application service*(s) is/are instantiated.

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 14816, *Road transport and traffic telematics — Automatic vehicle and equipment identification — Numbering and data structure*

ISO 15638-1, *Intelligent transport systems — Framework for collaborative Telematics Applications for Regulated commercial freight Vehicles (TARV) — Part 1: Framework and architecture*

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

ISO 15638-3, *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*

ISO/TS 15638-4:—[1)], *Intelligent transport systems — Framework for collaborative Telematics Applications for Regulated commercial freight Vehicles (TARV) — Part 4: System security requirements*

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

ISO 15638-8, *Intelligent transport systems — Framework for cooperative telematics applications for regulated vehicles (TARV) — Part 8: Vehicle access management and monitoring*

ISO/TS 15638-9, *Intelligent transport systems — Framework for collaborative Telematics Applications for Regulated commercial freight Vehicles (TARV) — Part 9: Remote electronic tachograph monitoring (RTM)*

ISO/TS 15638-10, *Intelligent transport systems — Framework for collaborative Telematics Applications for Regulated commercial freight Vehicles (TARV) — Part 10: Emergency messaging system/eCall (EMS)*

ISO 15638-11, *Intelligent transport systems — Framework for cooperative telematics applications for regulated vehicles (TARV) — Part 11: Driver work records*

ISO 15638-12, *Intelligent transport systems — Framework for cooperative telematics applications for regulated vehicles (TARV) — Part 12: Vehicle mass monitoring*

ISO 15638-13:—[1)], *Intelligent transport systems — Framework for cooperative telematics applications for regulated vehicles (TARV) — Part 13: Mass Penalties and Levies (VMC)*

ISO 15638-14, *Intelligent transport systems — Framework for cooperative telematics applications for regulated vehicles (TARV) — Part 14: Vehicle access control*

ISO 15638-15, *Intelligent transport systems — Framework for cooperative telematics applications for regulated vehicles (TARV) — Part 15: Vehicle location monitoring*

ISO 15638-16, *Intelligent transport systems — Framework for cooperative telematics applications for regulated vehicles (TARV) — Part 16: Vehicle speed monitoring*

ISO 15638-17, *Intelligent transport systems — Framework for cooperative telematics applications for regulated vehicles (TARV) — Part 17: Consignment and location monitoring*

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ISO/TS 15638-18, *Intelligent transport systems — Framework for collaborative Telematics Applications for Regulated commercial freight Vehicles (TARV) — Part 18: ADR (Dangerous Goods) transport monitoring (ADR)*

ISO/TS 15638-19, *Intelligent transport systems — Framework for collaborative Telematics Applications for Regulated commercial freight Vehicles (TARV) — Part 19: Vehicle parking facilities (VPF)*

ISO 17262, *Intelligent transport systems — Automatic vehicle and equipment identification — Numbering and data structures*

ISO 24534-3, *Intelligent transport systems — Automatic vehicle and equipment identification — Electronic registration identification (ERI) for vehicles — Part 3: Vehicle data*

ISO/TS 26683-1, *Intelligent transport systems — Freight land conveyance content identification and communication (FLC-CIC) — Part 1: Context, architecture and referenced standards*

ISO/TS 26683-2, *Intelligent transport systems — Freight land conveyance content identification and communication (FLC-CIC) — Part 2: Application interface profiles*

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
access
admittance, entry, permit to use the road network and/or associated infrastructure (bridges, tunnels etc.)

4.2
access methods
procedures and protocols to provision and retrieve data

4.3
access monitoring
observation and recording of vehicle related data when using the road network and/or associated infrastructure (bridges, tunnels etc.)

4.4
Accord européen relatif au transport international des marchandises Dangereuses par Route
ADR
UNECE regulations and declaration systems for agreements relating to dangerous goods/hazardous goods

4.5
app
small (usually) Java™[2)] applets, organized as software bundles, that support *application services (4.6)* by keeping the *data pantry (4.24)* of the *IVS(4.32)* provisioned with up to date data

4.6
application service
service provided by a *service provider (4.50)* enabled by accessing data from the *IVS (4.32)* of a *regulated vehicle (4.47)* through a wireless communications network

4.7
application service provider
ASP
party that provides an *application service (4.6)*

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