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Intelligent transport systems — Framework for collaborative telematics applications for regulated commercial freight vehicles (TARV) —

Part 22: Freight vehicle stability monitoring

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

Partie 22: Surveillance de la stabilité des véhicules de transport de marchandises

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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 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 15638 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.

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Introduction

The unbalanced cargo inside the container loses vehicle stability condition and sometimes creates serious/dangerous situations where the vehicle loses control causing vehicle roll over on the road when speed exceeds the safe limit for that particular road circumstance. Some freight vehicles have a stability monitoring system on board; however most vehicles do not have such devices and adding a stability monitoring service from a remote service provider to the stand alone vehicle stability monitoring function can increase vehicle stability control during freight road transport. This document standardizes the conceptual operational framework of freight vehicle stability monitoring services provided by remote monitoring systems serviced by service providers. The ISO 15638 series of TARV application standards are based on a triumvirate of vehicle operators with in-vehicle systems, on-board application service providers and jurisdictions. The basic TARV standards focus on the transactions between these parties via ITS-stations, and roadside sensors and using this system architecture, additional remote vehicle stability monitoring service to freight vehicles can be realized. The new means of safe road transport management and enforcement may be enabled by using this document where jurisdiction needs such regulated monitoring.

It, therefore, seems appropriate to include this additional Part 22 to the ISO 15638 series of standards to provide the means to add safe road transport of freight vehicles.

It is necessary that the telematic applications can be integrated into the embedded computing systems available on the market. The need for interoperability of different solutions is also important as several actors with different solutions may be involved in information needs. Securing the data exchanged is also a particularly important point.

NOTE Related to EC regulations, ISO 15638-9[1)] already covers provisions consistent with EC 165/2014. This document is complementary to and not competitive to ISO 15638-9, and therefore consistent with EC 165/2014.

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Intelligent transport systems — Framework for collaborative telematics applications for regulated commercial freight vehicles (TARV) —

Part 22: Freight vehicle stability monitoring

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1 Scope

The ISO 15638 series of standards (Parts 1 to 21) define the framework for online fleet management of regulated commercial freight vehicles utilizing data communication between in-vehicle systems and an application service provider via on-board communication unit interfacing with road monitoring infrastructure and roadside sensors. In this document, an unregulated service architecture frame work for freight vehicle stability monitoring architecture is defined. This statement does not preclude the regulated service where jurisdiction needs such a function.

The objective of this document is to provide a freight vehicle stability monitoring service function/ application for non-enforcement applications [and sometimes for regulated application service (RAS)]. This is for road transport safety management purposes of regulated commercial freight vehicle movements. The scope of this document is to

a) Reinforce vehicle stability monitoring for non-enforcement and other purposes by providing safety advisory information provisions to the freight vehicle drivers/operators transporting heavy goods on the freight vehicles.

This document defines the framework for remote vehicle stability monitoring for non-enforcement and other management purpose applications conceptual operation.

This document is complementary to, and does not replace, any ISO 15638 series standards. This document is beneficial to vehicle monitoring management purpose entities and it provides additional use cases for TARV service applications.

This document is specialized towards the realization of safer road transport of freight vehicles by providing safety advisory information to the vehicle from the service provider and it utilizes ISO 15638 series of standards basic architecture framework defined in ISO 15638-21. The vehicle on-board sensor detected freight vehicle and/or freight container stability data and/or road side sensor data (vehicle stability status detection at roadside) are sent out to the service provider through ITS communication media. The service provider provides users with safety information such as recommended safe speed limit for that particular vehicle and gives speed limit advice messages as necessary. The various V2I communication paths can be used according to the various use cases.

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

ISO 15638 (all parts), *Intelligent transport systems — Framework for cooperative telematics applications for regulated commercial freight vehicles (TARV)*

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

ISO 24534-3, *Intelligent transport systems — Automatic vehicle and equipment data*

ISO 26683-2, *Intelligent transport systems — Freight land conveyance content identification and communication — Part 2: Application interface profiles*

3 Terms and definitions

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

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

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

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

3.1
access methods
procedures and protocols to provision and retrieve data

3.2
app
small (usually) software applets, organized as software bundles, that support *application services* (3.3) by keeping the *data pantry* (3.18) provisioned with up to date data

3.3
application service
service provided by a *service provider* (3.36) enabled by accessing data from the *IVS* (3.23) of a *regulated vehicle* (3.33) via a wireless communications network

3.4
application service provider
ASP
party that provides an *application service* (3.3)

3.5
app library
separately secure area of memory in *IVS* (3.23) where apps are stored with different access controls to *data pantry* (3.18)

3.6
application service data file
ASD file
file held in the *data pantry* (3.18) of the *IVS* (3.23) containing data specific to an *application service* (3.3)

3.7
architecture
formalised description of the design of the structure of TARV and its *framework* (3.21)

3.8
audit
auditing
review of a party's capacity to meet, or continue to meet, the initial and ongoing certification agreements as a *service provider* (3.36)

3.9
authentication
function intended to establish and verify a claimed identity

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