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Standard**

ISO 15638-23

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

Part 23:

Tyre pressure monitoring (TPM)

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

Partie 23: Suivi de la pression des pneus

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Contents

Page

Foreword	vi
Introduction	vii
1 Scope	1
2 Normative references	1
3 Terms and definitions	2
4 Symbols and abbreviated terms	7
5 Conformance	8
6 General overview and framework requirements	9
6.1 General	9
6.2 TARV general principals	9
6.3 Tyre pressure monitoring systems (TPMS)	9
6.3.1 General	9
6.3.2 Types of TPMS	9
6.3.3 TPMS regulations and International Standards	10
6.3.4 Technological and legislative feasibility of TPMS for commercial vehicles	13
6.3.5 Conformance requirements for TARV-TPM systems	13
6.3.6 Unique identification of wheels	13
6.4 TARV-TPM application profiles	17
6.4.1 General	17
6.4.2 Minimum functionalities	18
6.4.3 Application profile A1: the cyclical initiation of TPM message by on-board equipment (TPM-C)	18
6.4.4 Application profile A2: the exceptional initiation of TPM message by on-board equipment (TPM-E)	18
6.4.5 Application profile A3: the provision of TPM data as the result of an off-board request (TPM-R)	18
6.4.6 Application profile A4: the provision of TPM data as the result of an off-board reading of tyre pressures of vehicles which can potentially be unequipped (TPM-O)	19
6.5 TARV-TPM communication profiles	19
6.5.1 General	19
6.5.2 Overview of Communication profile C1: remote inspection addressed via an ITS-station instigating a download of data to an application service provider via a C-ITS-station (as defined in ISO 15638-2/ISO 21217)	19
6.5.3 Overview of Communication profile C2: remote inspection addressed via a packet switched cellular network (3G LTE, 4G LTE, 5G SRE) instigating a download of data to an application service provider via a wireless communications interface	21
6.5.4 Overview of Communication profiles C3 and C4: short-range wireless communication interrogator instigating a physical roadside inspection (primary:-secondary)	23
6.5.5 Overview of Communication profile C3: roadside inspection using a short-range wireless communication interrogator, instigating a download of data to an application service provider — Communication profile C3a	25
6.5.6 Overview of Communication Profile C4: Roadside inspection using a short-range wireless communication interrogator, instigating a physical roadside inspection (primary:-secondary) — Communication profile C4a	26
6.5.7 Communication profile C5: roadside inspection using in-road equipment	27
6.6 Communications requirements	27
6.6.1 General communications requirements	27
6.6.2 Communications profile C1 requirements	28
6.6.3 Communications profile C2 requirements	28
6.6.4 Communications profiles C3 and C4 provisions	28

6.6.5	Communication profile C5 requirements.....	29
7	Requirements for services using generic vehicle data.....	29
8	Application services that require data in addition to basic vehicle data.....	29
8.1	General.....	29
8.2	Quality of service requirements.....	29
8.3	Test requirements.....	29
8.4	Marking, labelling and packaging.....	29
9	Common features of regulated TARV application services.....	30
9.1	General.....	30
9.2	Communication profiles C1 and C2.....	30
9.3	Communication profiles C3 and C4.....	31
9.4	Common role of the jurisdiction, approval authority, service provider and user.....	32
9.5	Common characteristics for instantiations of regulated application services.....	32
9.6	Common sequence of operations for regulated application services.....	32
9.7	Quality of service.....	32
9.8	Information security.....	32
9.9	Structure of TPM data.....	32
9.10	Data naming content and quality.....	33
9.11	Software engineering quality systems.....	33
9.12	Quality monitoring station.....	33
9.13	Audits.....	33
9.14	Data access control policy.....	33
9.15	Approval of IVSs and service providers.....	33
10	Tyre pressure monitoring (TPM).....	34
10.1	TARV-TPM service description and scope.....	34
10.1.1	Generic TARV-TPM use case via the application service provider.....	34
10.1.2	TPM-tyre pressure monitoring system on-board (TPM-C, TPM-E, TPM-R).....	35
10.1.3	Storage of the TPM data on-board the vehicle.....	35
10.1.4	Off-board tyre pressure monitoring system roadway (TPM-O).....	35
10.1.5	TPM inspection and communication profiles.....	35
10.1.6	Use case of tyre pressure monitoring inspection by an inspector of the jurisdiction using short-range equipment (Communication profiles C3 and C4).....	36
10.2	Description of TARV-TPM regulated application service.....	36
10.3	Concept of operations for TARV-TPM.....	38
10.3.1	General.....	38
10.3.2	Statement of the goals and objectives of the TARV-TPM system.....	38
10.3.3	Strategies, tactics, policies and constraints affecting the TARV-TPM system.....	38
10.3.4	Organizations, activities and interactions among participants and stakeholders of TARV-TPM.....	39
10.3.5	Statement of responsibilities and authorities delegated for TARV-TPM.....	40
10.3.6	Equipment required for TARV-TPM.....	42
10.3.7	Operational processes for the TARV-TPM system.....	43
10.3.8	Role of the jurisdiction for TARV-TPM.....	44
10.3.9	Role of the TARV-TPM prime service provider.....	44
10.3.10	Role of the TARV-TPM application service provider.....	44
10.3.11	Role of the TARV-TPM user.....	44
10.3.12	Generic characteristics for all instantiations of the TARV tyre pressure monitoring (TPM) application service.....	44
10.4	Sequence of operations for TARV-TPM.....	45
10.4.1	General.....	45
10.5	TARV-TPM service elements (SE).....	46
10.5.1	TARV-TPM SE 1: Establish "tyre pressure monitoring" regulations, requirements and approval arrangements.....	46
10.5.2	TARV-TPM SE2: Request system approval.....	47
10.5.3	TARV-TPM SE3: User (operator) contracts with prime service provider.....	47
10.5.4	TARV-TPM SE4: User (operator) equips vehicle with a tyre pressure monitoring system.....	47

10.5.5	TARV-TPM SE5: User contracts with application service provider	47
10.5.6	TARV-TPM SE6: Application service provider uploads software into the TARV-equipped vehicles of the operator	47
10.5.7	TARV-TPM SE7: Create data	47
10.5.8	TARV-TPM-C SE8: Pre-programmed cyclical interval sending tyre pressure monitoring data to application service provider (Communication profiles C1 and C2)	47
10.5.9	SE9: TPM-R "Interrogated" request for tyre pressure monitoring data	48
10.5.10	TARV-TPM SE11: End of session	50
10.5.11	Provision of TPM data as the result of an off-board reading of tyre pressures of vehicles which are potentially unequipped (TPM-O): Application profile A4	50
10.6	Generic TARV-TPM data naming, content and quality	50
10.7	TPM data content	50
10.8	TARV-TPM application-service-specific provisions for quality of service	50
10.9	TARV-TPM application-service-specific provisions for test requirements	51
10.10	TARV-TPM application-specific rules for the approval of IVSs and service providers	51
11	Declaration of patents and intellectual property	51
	Annex A (informative) TPM communication and transaction profiles	52
	Annex B (normative) Communication profile for 5,8 GHz DSRC communications	54
	Annex C (normative) TARV-TPM data definition	55
	Bibliography	73

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Foreword

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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).

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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

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 vary from jurisdiction to jurisdiction, but include electronic on-board recorders, digital tachograph on-board mass monitoring, "mass" data for regulatory control and management, tyre pressure monitoring, vehicle access methods, hazardous goods tracking and eCall. Additional applications with a regulatory impact currently under development include fatigue management, speed monitoring and vehicle penalties imposed based on location, distance and time.

The ISO 15638 series addresses and defines the framework for a range of cooperative telematics applications for regulated vehicles such as access methods, driver fatigue management, speed monitoring, on-board mass monitoring, remote tachograph monitoring, ADR (agreement concerning the international carriage of dangerous goods by road) management, etc. The overall scope includes the concept of operation, legal and regulatory issues, and the generic cooperative provision of services to regulated vehicles, using an on-board ITS platform. The framework is based on a (multiple) service-provider oriented approach with provisions for the approval and auditing of service providers.

The ISO 15638 series provides both the means to achieve current requirements for telematics applications for regulated vehicles, and a basis for the future development of cooperative telematics applications for regulated vehicles.

The ISO 15638 series has been developed over several years with the objective of enabling telematics applications with whatever wireless communications are available at a given time and location, and providing a migration path to the cooperative ITS technologies and techniques that are steadily emerging.

Many new freight tractors/trucks use "tyre pressure monitoring systems" (TPMSs) to inform the operator of whether or not tyres on the vehicle are properly inflated (or are missing entirely). However, older freight tractors/trucks and most trailers do not use this technology. As a result, many freight vehicles operate with underinflated or missing tyres. These vehicles are potentially unsafe as their braking performance is degraded, their stability is compromised, their fuel efficiency is reduced, thus increasing greenhouse gas emissions, and they are non-compliant with roadway and bridge weight limitations, thus reducing pavement and bridge life resulting in increased roadway infrastructure costs. This document is designed to improve freight vehicle road transport safety and timely freight delivery while reducing accidents.

This document addresses the realization of safer road transport for freight vehicles utilizing the existing ISO 15638 series basic architecture framework, together with ISO 21750 and UNECE Regulation 141.^[22]

In the system described in this document, a vehicle on-board sensor identifies whether a tyre is underinflated or missing and provides these data to an in-vehicle system (IVS). Either at predetermined intervals, upon registering an anomaly, or on request from the service provider, the IVS sends the most recent TPMS data to a predetermined address provided by the service provider.

The service provider notifies vehicle operators or commercial vehicle enforcement agencies in order for corrective action to be taken to correct the tyre deficiency, as necessary.

This document provides specifications for tyre pressure monitoring and supports several defined communication profiles by which this function may be performed.

As with other parts of the ISO 15638 series, this document neither prescribes nor proscribes particular modes of operation, but instead provides a number of defined communication and data profiles within which jurisdictions and operators can achieve their objectives for tyre pressure monitoring within the objectives and constraints of their regulations. This document recognizes that those requirements and constraints will differ between jurisdictions.

NOTE 1 The ISO 15638 series has been developed for use in the context of regulated commercial freight vehicles (hereinafter referred to as "regulated vehicles"). There is nothing however to prevent a jurisdiction extending or adapting the scope to include other types of regulated vehicles, as it deems appropriate.