



BSI Standards Publication

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

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Part 4: System security requirements

## National foreword

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

**Part 4:  
System security requirements**

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

*Partie 4: Exigences des systèmes de sécurité*





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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](http://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](http://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](http://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](http://www.iso.org/members.html).

## 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. While the regulatory services in use or being considered varies from country to country, these include services such as charging, digital tachograph, hazardous goods tracking and e-call. Additional applications with a regulatory impact being developed include access monitoring, on-board mass monitoring, fatigue management, speed monitoring.

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 vehicle that operate within such regulations. Such International Standards will allow for a speedy development and specification of new applications that build upon the functionality of a generic specification platform. The ISO 15638-4 series of standards describes and defines the framework and requirements so that the on-board equipment can be commercially designed in an open market to meet common requirements.

The ISO 15638 series of standards:

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

The ISO 15638 series of standards 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.

This document provides general specifications for security for communications and data exchange aspects of candidate regulated applications which are specified in ISO 15638-8 (and Parts 8 to 21 at the time of developing this document, but further parts may be added later if a requirement for additional regulated applications to be standardised are identified), the selection and implementation for all or any of which remain a decision for the implementing jurisdiction.

**NOTE 1** The definition of what comprises a 'regulated' vehicle is regarded as an issue for National decision, and can vary from jurisdiction to jurisdiction. The ISO 15638 series of standards 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 jurisdiction to jurisdiction. The ISO 15638 series of standards does not impose any requirements on nations in respect of which services for regulated vehicles jurisdictions 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.

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

## Part 4: System security requirements

### 1 Scope

Security requirements address both hardware and software aspects.

This document addresses the security requirements for:

- the transfer of TARV data from an IVS to an application service provider across a wireless communications interface;
- the receipt of instructions from an application service provider to a TARV IVS;
- the communications aspects of handling of software updates for the IVS over wireless communications.

This document defines the requirements for telematics applications for regulated commercial vehicles for:

- a) threat, vulnerability and risk analysis;
- b) security services and architecture;
- c) identity management;
- d) security architecture and management;
- e) identity-trust and privacy management;
- f) security-access control;
- g) security-confidentiality services.

This document provides:

- general specifications for the security of TARV;
- specifications for the security of TARV transactions and data within an ITS-station “bounded secure managed domain” (BSMD);
- specifications for the security of TARV transactions and data transacted with a predetermined address outside of a BSMD.

IVS security requirements are dealt with by the prime service provider and application service provider (See ISO 15638-1).

Application service provision security is dealt with by the application service provider (and could be the subject of a separate TARV standards deliverable).