TECHNICAL SPECIFICATION

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Automatic vehicle and equipment identification — Electronic Registration Identification (ERI) for vehicles —

Part 2: Operational requirements

Identification automatique des véhicules et des équipements — Identification d'enregistrement électronique (ERI) pour les véhicules —

Partie 2: Exigences de fonctionnement

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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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

In other circumstances, particularly when there is an urgent market requirement for such documents, a technical committee may decide to publish other types of normative document:

— an ISO Publicly Available Specification (ISO/PAS) represents an agreement between technical experts in an ISO working group and is accepted for publication if it is approved by more than 50 % of the members of the parent committee casting a vote;

— an ISO Technical Specification (ISO/TS) represents an agreement between the members of a technical committee and is accepted for publication if it is approved by 2/3 of the members of the committee casting a vote.

An ISO/PAS or ISO/TS is reviewed after three years in order to decide whether it will be confirmed for a further three years, revised to become an International Standard, or withdrawn. If the ISO/PAS or ISO/TS is confirmed, it is reviewed again after a further three years, at which time it must either be transformed into an International Standard or be withdrawn.

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.

ISO/TS 24534-2 was prepared by Technical Committee ISO/TC 204, *Intelligent transport systems*, and by Technical Committee CEN/TC 278, *Road transport and traffic telematics* in collaboration.

ISO/TS 24534 consists of the following parts, under the general title *Automatic vehicle and equipment identification — Electronic Registration Identification (ERI) for vehicles*:

— *Part 1: Architecture*

— *Part 2: Operational requirements*

— *Part 3: Vehicle data*

— *Part 4: Secure communications using asymmetrical techniques*

— *Part 5: Secure communications using symmetrical techniques*

Introduction

A quickly emerging need has been identified with administrations to improve the unique identification of vehicles for a variety of services. Situations are already occurring where manufacturers intend to fit lifetime tags to vehicles. Various governments are considering the needs and benefits of Electronic Registration Identification (ERI) as a legal proof of vehicle identity with potential mandatory uses. There is commercial and economic justification both in respect of tags and infrastructure that a standard enables an interoperable solution.

ERI is a means of uniquely identifying road vehicles. The application of ERI will offer significant benefits over existing techniques for vehicle identification. It will be a suitable tool for the future management and administration of traffic and transport, including applications in free-flow, multi-lane traffic conditions with the capability to support mobile transactions. ERI addresses the need of authorities and other road users for a trusted electronic identification, including roaming vehicles.

The unique vehicle identifier is held in a secure environment within an Electronic Registration Tag (ERT) fitted to a vehicle. The identifier used to identify a vehicle is called the vehicle identifier or vehicleId. The preferred identifier is the VIN, assigned to the vehicle by its manufacturer in accordance with ISO 3779, or it may be a variant of this identifier.

The ERT may contain vehicle data in addition to the unique identifier, as required by authorities or their agents for ERI applications (e.g. vehicle registration details). An ERT is the core component for simple to complex applications of ERI, ranging from a simple read-only device, with more complex applications requiring one or more communication systems.

The ERT may be accessed by an Electronic Registration Reader (ERR), either to read, read/write data, from or to an ERT.

Optionally, the ERT may communicate with other onboard vehicle equipment. The potential range of ERI applications, simple to complex, will require interoperability to exist between an ERT and an ERR by application.

Whilst it is desirable to determine a single set of requirements for operation in all environments and under all operating conditions, this could impose unacceptable costs for an ERI application. This part of ISO/TS 24534 provides classification categories of operational parameters for different aspects of a system specification, enabling appropriate performance parameters to be selected for an ERI application. Annex A provides example ERI user requirements with operational scenarios.

Automatic vehicle and equipment identification — Electronic Registration Identification (ERI) for vehicles —

Part 2: Operational requirements

1 Scope

This part of ISO/TS 24534 provides the requirements for electronic registration that is based on an identifier assigned to a vehicle (e.g. for recognition by national authorities) suitable to be used for:

— electronic identification of local and foreign vehicles by national authorities,

— vehicle manufacturing, in-life-maintenance and end-of-life identification (vehicle life cycle management),

— adaptation of vehicle data (e.g. for international resales),

— safety-related purposes,

— crime reduction, and

— commercial services.

It adheres to privacy and data protection regulations.

This part of ISO/TS 24534 defines the operational requirements for the remaining parts of ISO/TS 24534 and the more limited but relevant provisions of ISO 24535.

Whilst the definition of the organizational framework required to implement, operate and maintain an ERI system is outside the scope of this part of ISO/TS 24534, a list of potential stakeholders in the public and private sector has been included.

2 Normative references

The following referenced documents are indispensable for the application 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/TS 24534-3, *Automatic vehicle and equipment identification — Electronic Registration Identification (ERI) for vehicles — Part 3: Vehicle data*

ISO 7498-2, *Information processing systems — Open Systems Interconnection — Basic Reference Model — Part 2: Security Architecture*

ISO 14815:2005, *Road transport and traffic telematics — Automatic vehicle and equipment identification — System specifications*

EN 301 489-1, *Radio equipment and systems, EMC, common technical requirements*

IEC 60215:1987, *Safety requirements for radio transmitting equipment*

IEC 721-3-5:1988, *Classification of environmental conditions — Part 3: Classification of groups of environmental parameters and their severities — Section 5: Ground vehicle installations*

IEC 1000-4-6, *Electromagnetic compatibility (EMC) — Part 4: Testing and measurement techniques — Section 6: Immunity to conducted disturbances, induced by radio-frequency fields*

EN 300 764, *Electromagnetic compatibility and radio spectrum matters (ERM) — Road Transport and Traffic Telematics (RTTT) — Technical characteristics and test methods for data transmission equipment operating in the 5.8GHz industrial, scientific and medical (ISM) band*

3 Terms and definitions

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

3.1
access control
prevention of unauthorized use of a resource, including the prevention of use of a resource in an unauthorized manner

[ISO 7498-2]

3.2
access control list
list of entities, together with their access right, which are authorized to have access to a resource

[ISO 7498-2]

3.3
authentication
entity authentication which provides each entity with the assurance of the other's identity

3.4
back office
facility for the control and data management of an ERI system by an authority, or for the provision of related services by a service provider

3.5
ERI Data
vehicle identifier and possible additional vehicle data as defined in ISO/TS 24534-3

3.6
Electronic registration identification
ERI
action or act of identifying a vehicle by electronic means for the purposes described in the scope of this part of ISO/TS 24534

3.7
Electronic registration reader
ERR
device used to read or read/write data from or to an "Electronic Registration Tag"

3.8
Electronic registration tag
ERT
onboard ERI device that contains the ERI data, including relevant security provisions and one or more interfaces to access that data

NOTE In case of high security this is a type of SAM.

