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Intelligent transport systems — Automatic vehicle identification — Basic electronic registration identification (Basic ERI)

Systèmes intelligents de transport — Identification automatique des véhicules — Identification d'enregistrement électronique de base (ERI de base)

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Foreword

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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.

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ISO 24535 was prepared by Technical Committee ISO/TC 204, *Intelligent transport systems*.

Introduction

Electronic registration identification (ERI) is used, or can be used, for a number of purposes and with a range of levels of security. This International Standard provides for a basic ERI functionality for the exchange of data between an in-vehicle component containing the ERI data and a reader or writer inside or outside the vehicle. Other International Standards in this family of ERI standards, ISO/TS 24534-4 and ISO/TS 24534-5, are being developed to service a range of ERI requirements. The relationship between the various parts of ISO 25434 and ISO 24535 are shown in Figure 1.

This International Standard defines a "basic ERI" system with security adequate for information that is currently available manually (such as license plate and/or VIN data). This International Standard does not purport to provide the high levels of security, authentication and confidentiality required for some administrative requirements (those requiring high-security fully featured systems are advised to follow ISO/TS 24534-4 or ISO/TS 24534-5).

In its most fundamental form, "basic ERI" simply provides unique vehicle identification. However the "basic ERI" concept allows for the transmission of additional application-relevant data.

Different envisaged applications require some or all of these aspects. Simple registration identification requires a basic communication stack together with moderate levels of security. If there are national security issues or there is personal confidential information stored, the levels of security and encryption need to be more comprehensive.

However, while many applications require an ISO/TS 24534-4 or ISO/TS 24534-5 "fully featured" operational environment, a rapidly emerging, and urgent, need has also been identified within road traffic administrations to provide a simple unique electronic identification of registered vehicles. Such applications may frequently be those where visible information is currently supplied in the form of, for example, the vehicle registration numberplate, VIN number, or a vignette to publicly display registration and compliance with vehicle testing, payment of excise duties, but is not necessarily restricted to those applications. Such applications may not require the levels of security associated with the more demanding requirements envisaged within security, regulatory, enforcement, or anonymous environments.

"Basic ERI" is defined in this International Standard as an electronic system that uniquely identifies a registered vehicle. It incorporates an electronic device that allows the unique, remote and reliable communication of one or more identifying parameters of a vehicle. It typically comprises an in-vehicle data storage element and a vehicle-to-infrastructure data communication element.

"Basic ERI" is a simple means of uniquely identifying road vehicles using a system that can be implemented and deployed at minimum cost. The widespread application of "basic ERI" offers significant benefits over existing manual techniques for vehicle identification. "Basic ERI" addresses the need of authorities and other users for simple electronic identification of roaming vehicles. The identification data always includes a unique vehicle identifier and can also include other data typically found in the vehicle's registration certificate and other data related to specific applications.

"Basic ERI" is an application in its own right, allowing the electronic identification of vehicles. But more importantly, it acts as an enabler, making many other applications more effective through the provision of vehicle identification information. It will contribute to the improvement of road safety and traffic management, reduce crime, and enhance the operational efficiency of public authorities.

Electronic registration identification can also be used in support of vehicle end-of-life mandatory provisions, such as Directive 2000/53/EC of the European Parliament on end-of-life vehicles (ELV directive).

Whilst the requirements for "basic ERI" can be less demanding than those for ISO/TS 24534-4 or ISO/TS 24534-5 "fully featured" ERI, it is important that the basic data concepts utilised are common with those defined in ISO/TS 24534-3. (ISO/TS 24534-4 and ISO/TS 24534-5 are also capable of instantiation in different degrees of capability, and the reader is advised to study all three International Standards to find that most suitable to their needs).
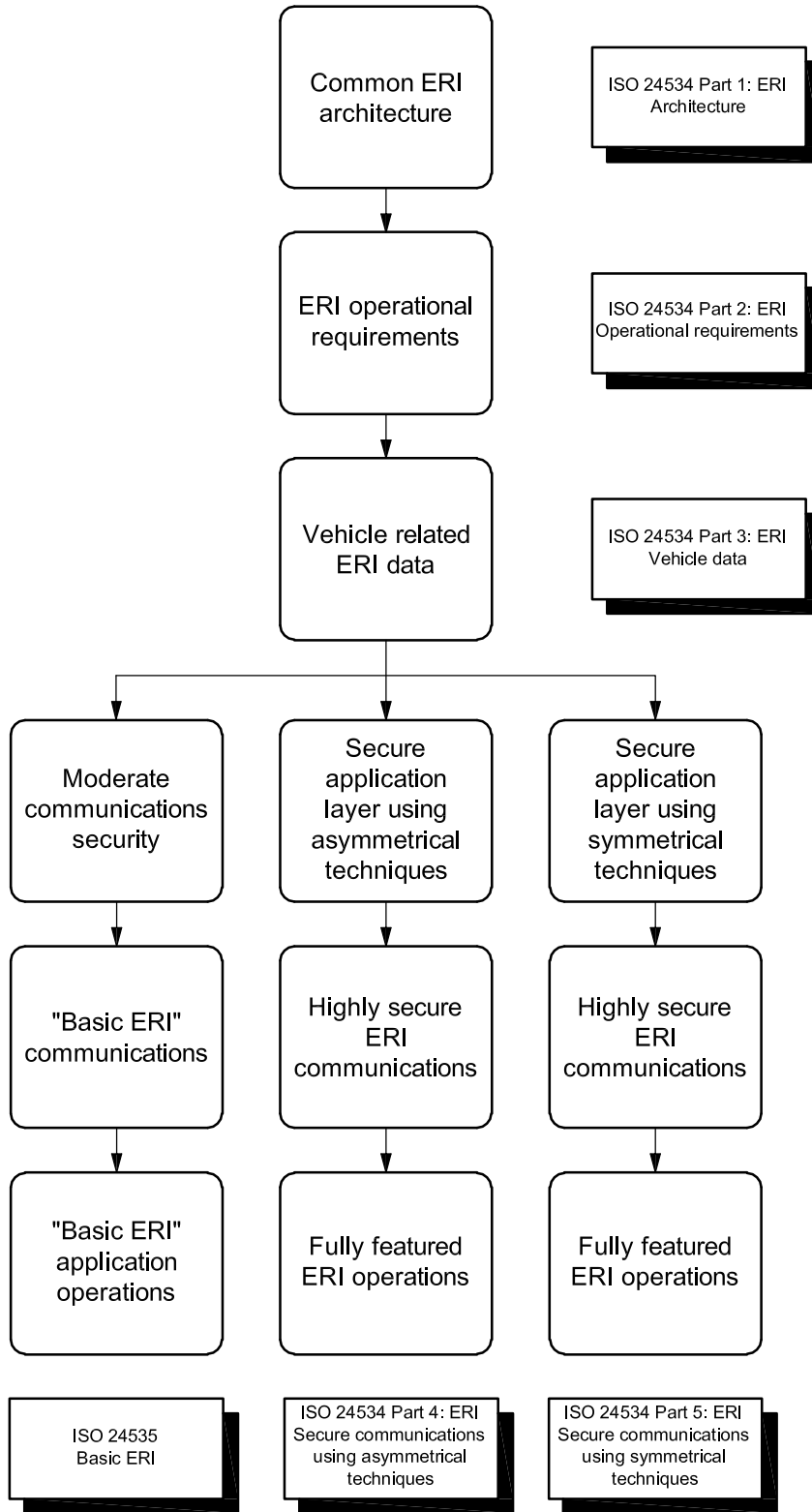

Figure 1 — Functional stack accommodating both "fully featured" and "basic ERI"