



# SLOVENSKI STANDARD

## SIST EN ISO 14815:2005

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SIST ENV ISO 14815:2003

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### Cestna transportna in prometna telematika – Samodejna identifikacija vozil in opreme – Sistemske specifikacije (ISO 14815:2005)

Road transport and traffic telematics - Automatic vehicle and equipment identification - System specifications (ISO 14815:2005)

Telematik für den Straßenverkehr und Transport - Automatische Identifizierung von Fahrzeugen und Geräten - Systemspezifikation (ISO 14815:2005)

Télématique de la circulation et du transport routier - Identification automatique des véhicules et équipements - Spécification des systèmes (ISO 14815:2005)

**Ta slovenski standard je istoveten z: EN ISO 14815:2005**

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#### ICS:

03.220.20	Cestni transport	Road transport
35.240.60	Uporabniške rešitve IT v transportu in trgovini	IT applications in transport and trade

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EUROPEAN STANDARD  
NORME EUROPÉENNE  
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**EN ISO 14815**

July 2005

ICS 35.240.60; 03.220.20

Supersedes ENV ISO 14815:2000

English Version

Road transport and traffic telematics - Automatic vehicle and  
equipment identification - System specifications (ISO  
14815:2005)

Télématique de la circulation et du transport routier -  
Identification automatique des véhicules et équipements -  
Spécification des systèmes (ISO 14815:2005)

Telematik für den Straßenverkehr und Transport -  
Automatische Identifizierung von Fahrzeugen und Geräten  
- Systemspezifikation (ISO 14815:2005)

This European Standard was approved by CEN on 14 July 2005.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the Central Secretariat has the same status as the official versions.

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EUROPEAN COMMITTEE FOR STANDARDIZATION  
COMITÉ EUROPÉEN DE NORMALISATION  
EUROPÄISCHES KOMITEE FÜR NORMUNG

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EN ISO 14815:2005 (E)

## Foreword

This document (prEN ISO 14815:2005) has been prepared by Technical Committee CEN/TC 278 "Road transport and traffic telematics", the secretariat of which is held by NEN, in collaboration with Technical Committee ISO/TC 204 "Transport information and control systems".

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by January 2006, and conflicting national standards shall be withdrawn at the latest by January 2006.

This document supersedes ENV ISO 14815:2000.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

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INTERNATIONAL  
STANDARD

ISO  
14815

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2005-07-15

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**Road transport and traffic telematics —  
Automatic vehicle and equipment  
identification — System specifications**

*Télématique de la circulation et du transport routier — Identification  
automatique des véhicules et équipements — Spécification des  
systèmes*

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## Contents

Page

Foreword.....	iv
Introduction .....	v
<b>1 Scope .....</b>	<b>1</b>
<b>2 Normative references .....</b>	<b>2</b>
<b>3 Compliance.....</b>	<b>2</b>
<b>4 Terms and definitions.....</b>	<b>2</b>
<b>5 Abbreviations .....</b>	<b>4</b>
<b>6 Requirements .....</b>	<b>5</b>
<b>6.1 Generic system specification for AVI/AEI systems.....</b>	<b>5</b>
<b>6.2 System specification: architecture .....</b>	<b>6</b>
<b>6.3 Specific system specification for stand-alone AVI/AEI systems .....</b>	<b>8</b>
<b>6.4 Specific system specification for the AVI/AEI system function incorporated into other systems.....</b>	<b>9</b>
<b>6.5 Air interface aspects.....</b>	<b>9</b>
<b>6.6 Operating parameters.....</b>	<b>9</b>
<b>6.7 Data structure requirements.....</b>	<b>13</b>
<b>6.8 Privacy .....</b>	<b>13</b>
<b>6.9 Information security .....</b>	<b>13</b>
<b>6.10 Environmental parameters .....</b>	<b>13</b>
<b>6.11 Safety .....</b>	<b>14</b>
<b>7 Test requirements.....</b>	<b>14</b>
<b>7.1 Objectives.....</b>	<b>14</b>
<b>7.2 Operational parameters to be tested .....</b>	<b>14</b>
<b>Annex A (normative) Categories of AVI/AEI systems .....</b>	<b>17</b>
<b>Annex B (normative) Environmental parameters to be tested .....</b>	<b>22</b>
<b>Annex C (normative) Compliance/certification .....</b>	<b>27</b>
<b>Annex D (normative) Safety .....</b>	<b>30</b>
<b>Annex E (normative) Marking of AVI/AEI equipment.....</b>	<b>31</b>

**ISO 14815:2005(E)****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.

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 14815 was prepared by the European Committee for Standardization (CEN) Technical Committee CEN/TC 278, *Road transport and traffic telematics*, in collaboration with Technical Committee ISO/TC 204, *Intelligent transport systems*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

This first edition cancels and replaces ISO/TS 14815:2000, which has been technically revised.

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## Introduction

### System specification

This International Standard is designed to enable users and suppliers of AVI/AEI systems to specify system specification that will enable a nominal interoperability based on a DSRC link.

The terms “AVI” and “AEI” are used both to describe “independently functioning AVI/AEI systems” and as “the function of identification within other RTTT/TICS systems”. This International Standard supports both such uses where no other application or sector standard applies.

Whilst it may be desirable to determine a single set of requirements for operation in all environments and under all operating conditions, this could impose unacceptable costs.

This International Standard therefore provides standard “classes” for different aspects of system specification, such that a system specifier may select the appropriate performance parameters to meet a particular requirement. Supporting informative annexes also provide a number of general use “categories” which may be used to specify the environmental and operating parameters to support interoperable applications.

The architecture descriptions provided in this International Standard are in compliance with the guidelines provided by CEN/TC 278 WG13 ISO/TC 204 WG1.

For the data structure elements, Abstract Syntax Notation One (ASN.1) Packed Encoding Rules (PER) (ISO 8825-2) are used. This usage provides maximum interoperability and conformance to existing standards.

For detailed information on the use of ASN.1 PER for AVI/AEI applications, reference is made to ISO 14816.

This International Standard provides classification procedures and details test requirements needed to support system definition. These requirements are, wherever possible, determined by reference to existing standards and established practices.

### Test requirements

Test requirements are determined for AVI/AEI system components. The requirements to meet this International Standard encompass general performance measurement, operational, and environmental aspects.

### How to use this International Standard

It is also an objective to provide users with different applications and in different environmental circumstances a useful tool that is flexible enough to serve the various different needs. The categorization and classification system in this International Standard provides for this.

A brief guide showing how to use this International Standard is provided at the end of Annex A.

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# Road transport and traffic telematics — Automatic vehicle and equipment identification — System specifications

## 1 Scope

This International Standard defines a generic AVI/AEI System specification for nominal AVI/AEI to provide an *enabling* International Standard, which, whilst allowing the system specifier to determine the performance levels and operating conditions, provides a framework for nominal interoperability.

Within the road context of the Transport and Traffic Telematics Sector, AVI and AEI systems have the specific objective of achieving a unique or unambiguous positive identification of a vehicle or item of equipment, and to make that identification automatically.

Whilst AVI may also be seen as an essential component of some applications, the particular needs of such systems are outside the scope of this International Standard. As far as is possible, care is still taken to provide a useful tool for such applications.

This International Standard only refers to AVI/AEI in the road environment. Multimodal and intermodal exchanges of AVI/AEI are outside the scope of this International Standard.

Where AVI/AEI applications are part of a larger system, and where no standardized application-specific test requirements exist, these test requirements apply.

Anonymity and privacy issues are discussed in ISO 14816, and are not handled in this International Standard.

This International Standard is designed for system specification that will enable a nominal interoperability based on a DSRC link. AVI/AEI systems that are relying on other link types are outside the scope of this International Standard for those parameters where the link type influences parameters.

The scope of this International Standard is confined to generic AVI/AEI system specification for systems that have the following “core” components:

- A means of communication between the vehicle/equipment and the reading station (e.g. a DSRC link);
- operation within a reference architecture which enables compatible systems to read and interpret the identification (See ISO TR 14814);
- compliance to commonly understood data structures that enable meaningful interpretation of the data exchanged in the identification sequence (See ISO 14816);
- the provision of operating and environmental parameters (or classes of operating parameters) within which such systems must successfully function without impairing interoperability. This is to ensure that the system specifier can state his requirements clearly to Implementation Designers and Integrators, and measure the performance of such systems (covered in this International Standard).

**ISO 14815:2005(E)****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 7637-1:1990, *Road vehicles — Electrical disturbance by conduction and coupling — Part 1: Passenger cars and light commercial vehicles with nominal 12 V supply voltage — Electrical transient conduction along supply lines only*

ISO/IEC 8825-2, *Information technology — ASN.1 encoding rules: Specification of Packed Encoding Rules (PER) — Part 2*

ISO/TR 14814<sup>1)</sup>, *Road transport and traffic telematics — Automatic vehicle and equipment identification — Reference architecture and terminology*

ISO 14816<sup>1)</sup>, *Road transport and traffic telematics — Automatic vehicle and equipment identification — Numbering and data structure*

ENV 12795, *Road Transport and Traffic Telematics (RTTT) — Dedicated Short-Range Communication (DSRC) — DSRC Data Link Layer: Medium Access and Logical Link Control*

IEC 68-1:1987, *Basic Environmental Testing Procedures — Part 1: General and Guidance*

IEC 68-4:1987, *Environmental testing — Part 4: Information for specification writers — Test summaries*

IEC 215:1987, *Safety requirements for radio transmitting equipment (EN 60215)*

IEC 721-3-4:1988, *Classification of environmental conditions — Part 3: Classification of groups of environmental parameters and their severities — Stationary use at non-weather protected locations*

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

IEC 801-2:1984, *Electromagnetic compatibility for industrial-process measurement and control equipment*

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

CEPT/ERC T/R 22/04:1991, *Harmonisation of Frequency Bands for Road Transport Information Systems*

**3 Compliance**

In order to claim compliance with this International Standard, a supplier shall provide, for each physically separated component, detail of the classification of its product for all relevant (environmental and operational) parameters determined within this International Standard.

**4 Terms and definitions**

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

**4.1****AVI/AEI system**

AVI/AEI application in an RTTT system, either as a stand-alone system or as part of an RTTT application

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1) To be published.

**4.2****bi-directional monologue**

“read only” functionality with a start signal from the FE side

**4.3****category**

groupings of common class requirements to support interoperability between AVI/AEI systems of common purpose (e.g. a “ruggedized” category versus a “standard” category)

**4.4****class**

differentiation between system components with different “grades” of requirements for parameters (e.g. class 1 for “extreme” operational and environmental requirements)

**4.5****environmental parameters**

describe different environmental component properties/specifications

**4.6****extreme**

refers to class 1 requirements for the “ruggedized” system category “A”

**4.7****Fixed Equipment (FE)**

equipment required to interrogate, receive and interpret the data in the On-Board Equipment (OBE) in order to present the identification

**4.8****lifetime**

period of time during which an item of equipment exists and functions according to the relevant requirements of this International Standard

**4.9****maintainability**

ability to keep in a condition of good repair or efficiency

**4.10****Mean Time to Failure**

average time that a system functions before first failure

**4.11****Mean Time between Failures**

mean cycle (one failure and one repair) time of a maintained system

**4.12****Nominal Interoperability**

“Application Area Interoperability” in a region spanning two or more areas with cross-border operation between operator domains, districts or nations, the capability for a nominal AVI/AEI system FE to operate with a nominal AVI/AEI system OBE

**4.13****normal**

class 2 requirements for the “standard” system category “B”

**4.14****On-Board Equipment (OBE)**

equipment fitted to the vehicle or item to be identified and containing the unique or unambiguous positive identification