

This is a preview of "ISO 14816:2005". [Click here to purchase the full version from the ANSI store.](#)

First edition  
2005-11-01

---

---

## **Road transport and traffic telematics — Automatic vehicle and equipment identification — Numbering and data structure**

*Télématique de la circulation et du transport routier — Identification  
automatique des véhicules et équipements — Codification et structure  
des données*



Reference number  
ISO 14816:2005(E)

© ISO 2005

This is a preview of "ISO 14816:2005". [Click here to purchase the full version from the ANSI store.](#)

**PDF disclaimer**

This PDF file may contain embedded typefaces. In accordance with Adobe's licensing policy, this file may be printed or viewed but shall not be edited unless the typefaces which are embedded are licensed to and installed on the computer performing the editing. In downloading this file, parties accept therein the responsibility of not infringing Adobe's licensing policy. The ISO Central Secretariat accepts no liability in this area.

Adobe is a trademark of Adobe Systems Incorporated.

Details of the software products used to create this PDF file can be found in the General Info relative to the file; the PDF-creation parameters were optimized for printing. Every care has been taken to ensure that the file is suitable for use by ISO member bodies. In the unlikely event that a problem relating to it is found, please inform the Central Secretariat at the address given below.

© ISO 2005

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office  
Case postale 56 • CH-1211 Geneva 20  
Tel. + 41 22 749 01 11  
Fax + 41 22 749 09 47  
E-mail [copyright@iso.org](mailto:copyright@iso.org)  
Web [www.iso.org](http://www.iso.org)

Published in Switzerland

This is a preview of "ISO 14816:2005". [Click here to purchase the full version from the ANSI store.](#)

## Contents

Page

Foreword.....	iv
Introduction .....	v
<b>1 Scope .....</b>	<b>1</b>
<b>1.1 Overall numbering scheme.....</b>	<b>1</b>
<b>1.2 AVI/AEI numbering scheme.....</b>	<b>1</b>
<b>2 Normative references .....</b>	<b>2</b>
<b>3 Terms, definitions and notations .....</b>	<b>3</b>
<b>4 Requirements .....</b>	<b>3</b>
<b>4.1 Overall coding structure .....</b>	<b>3</b>
<b>4.2 General requirements.....</b>	<b>3</b>
<b>4.3 Data structure.....</b>	<b>4</b>
<b>4.4 Residency of data .....</b>	<b>4</b>
<b>4.5 Table of coding structure identifiers .....</b>	<b>5</b>
<b>4.6 Coding structure data elements (AVI/AEI applications) .....</b>	<b>5</b>
<b>4.7 CS1- AVI/AEI Numbering scheme .....</b>	<b>6</b>
<b>4.8 CS2-Manufacturers numbering .....</b>	<b>7</b>
<b>4.9 CS3 – Validity limitation .....</b>	<b>7</b>
<b>4.10 CS4 – Vehicle license number coding .....</b>	<b>10</b>
<b>4.11 CS5 – Vehicle Identification Number (VIN).....</b>	<b>11</b>
<b>4.12 CS6 – Reserved for CEN/ISO .....</b>	<b>12</b>
<b>4.13 CS7 – Freight container numbering.....</b>	<b>12</b>
<b>4.14 CS8 – Tax authority code.....</b>	<b>13</b>
<b>Annex A (normative) Management and general rules for the administration of coding structures CS1, CS2 and CS8.....</b>	<b>14</b>
<b>Annex B (normative) A summary of CS definitions.....</b>	<b>24</b>
<b>Annex C (informative) Examples on the use of AVI/AEI coding structures .....</b>	<b>28</b>
<b>Bibliography .....</b>	<b>35</b>

## 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 14816 was prepared by Technical Committee ISO/TC 204, *Intelligent transport systems*, in collaboration with Technical Committee CEN/TC 278, *Road transport and traffic telematics*.

This first edition cancels and replaces (ISO/TS 14816:2000).

This is a preview of "ISO 14816:2005". [Click here to purchase the full version from the ANSI store.](#)

## Introduction

This International Standard specifies a data structure that enables upwards integration and expansion from the simplest low-cost AVI/AEI system to more complex functions. The structure is designed to be flexible and enabling rather than prescriptive.

This International Standard has been designed to provide for the differing requirements of AVI and AEI by the use of separate application specifics. By retaining these differing requirements within one supervisory document, the interoperability is maximized, particularly in the case where both AVI and AEI are required at the same time in the road environment.

In order to support systems using both active and passive On Board Equipment (OBE), the basic data structures have been minimized. This enables any manufacturer/operator with an OBE with a user addressable memory of only 56 bits to be able to conform to a full core identification according to this International Standard.

Abstract Syntax Notation One (ASN.1) is widely applied. Its usage provides maximum interoperability and conformance to existing International Standards, and meets the specifically defined requirements for a generic standard model for RTTT in that it:

- Uses existing standard Syntax Notation and Encoding Rules,
- Is adaptable and expandable,
- Does not include unnecessary information for a specific system, and
- Incurs a minimum of overhead in storage and transmission.

Readers who are unfamiliar with ASN.1 are advised to read ANNEX C before reading the main body of this International Standard. Readers are also advised to read ISO/IEC 8824, ISO/IEC 8825-1, ISO/IEC 8825-2 and ISO/IEC 8825-3 and other published work on ASN.1 before reading the main body of this International Standard.

ISO 14814 provides a reference architecture model for AVI/AEI systems.

Sections 4.1-4.6 of ISO 14816 provide a standardized yet flexible and interoperable framework for numbering schemes. A structure for AVI/AEI unambiguous identification and several numbering schemes associated with AVI/AEI systems are determined in this International Standard.

The core AVI/AEI numbering scheme, central to the effective use of many of the constructs, is a structure to provide unambiguous identification. 4.7 of this International Standard provides a data element coding for Automatic Vehicle and Equipment Identification (AVI/AEI) in RTTT applications. This coding provides a structure with the possibility of  $2^{56}$  (in excess of 72 million billions) unique identifiers, provided within a 56-bit code structure when ISO/IEC 8825-2 (PER) is used, i.e. no overhead is incurred.