

**Identification card systems - Surface  
transport applications - Part 2:  
Transport and travel payment related  
data elements and code lists**

Identification card systems - Surface transport  
applications - Part 2: Transport and travel payment  
related data elements and code lists

## EESTI STANDARDI EESSÕNA

## NATIONAL FOREWORD

<p>Käesolev Eesti standard EVS-EN 1545-2:2005 sisaldab Euroopa standardi EN 1545-2:2005 ingliskeelset teksti.</p> <p>Käesolev dokument on jõustatud 25.11.2005 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes.</p> <p>Standard on kättesaadav Eesti standardiorganisatsioonist.</p>	<p>This Estonian standard EVS-EN 1545-2:2005 consists of the English text of the European standard EN 1545-2:2005.</p> <p>This document is endorsed on 25.11.2005 with the notification being published in the official publication of the Estonian national standardisation organisation.</p> <p>The standard is available from Estonian standardisation organisation.</p>
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<p><b>Käsitlusala:</b> This European Standard specifies data formats, data elements and data elements with associated code lists for use within Surface Transport Applications on ICs.</p>	<p><b>Scope:</b> This European Standard specifies data formats, data elements and data elements with associated code lists for use within Surface Transport Applications on ICs.</p>
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ICS 35.240.15

Võtmesõnad:

English Version

## Identification card systems - Surface transport applications - Part 2: Transport and travel payment related data elements and code lists

Systèmes de cartes d'identification - Applications pour le  
transport terrestre - Partie 2: Eléments de données et listes  
de codes relatifs au paiement du transport

Identifikationskartensysteme - Landgebundene  
Beförderungsanwendungen - Teil 2: Datenelemente und  
Codelisten für Zahlungsvorgänge in Transport- und  
Reiseanwendungen

This European Standard was approved by CEN on 19 May 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.

CEN members are the national standards bodies of 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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## Foreword

This European Standard (EN 1545-2:2005) has been prepared by Technical Committee CEN/TC 224 "Machine readable cards, related device interfaces and operations", the secretariat of which is held by AFNOR.

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 April 2006, and conflicting national standards shall be withdrawn at the latest by April 2006.

This European Standard comprises the following parts, under the general title "Identification card systems - Surface transport applications":

General part:

Part 1: Elementary data types, general code lists and general data elements.

Sector specific part:

Part 2: Transport and travel payment related data elements and codes.

This European Standard supersedes ENV 1545-2:1993.

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.



## Introduction

ICs offer far greater opportunities for use in surface transport applications (STA) when compared to magnetic stripe and barcoded cards. The standardisation of data elements, which is the purpose of this European Standard, facilitates the use of ICs across multiple transport applications and operators, and in a variety of transport related terminals. This European Standard also permits application builders to minimise data duplication.

This European Standard contains definitions of data formats, data elements and specifies data elements with associated codelists related to transport and travel payment. It is for use in the creation of surface transport related data structures that may reside on a transport application. Abstract Syntax Notation One (ASN.1) has been used in the definition of data types in this European Standard.

This European Standard provides a comprehensive toolbox of data elements and types as the basis for the creation of data structures to be used in STAs. This European Standard alone does not ensure interoperability; this is left to the application builders. The definition of data structures to be used in STAs is left to applications.

This European Standard has a hierarchical approach:

1. basis for all definitions used in this European Standard is ASN.1 (ISO/IEC 8824);
2. EN1545-1 standardises its general elements, data types and data elements with associated code lists in accordance with ASN.1;
3. The sectoral parts of this European Standard (EN 1545-2) define the sector specific elements and codes. Apart from the sector specific codes that are directly based on ASN.1 all definitions of sector specific data elements have to be based on EN 1545-1 definitions;
4. It is left to the applications to define the relevant data structures (data objects) strictly based on the definitions of EN 1545:
  4. Any transport application data structures (sets)
    - sector specific data elements from EN 1545-sectoral
    - sector specific codes from EN 1545-sectoral
    - general data elements from EN 1545-1
    - elementary data types from EN 1545-1
    - general data elements with code lists from EN 1545-1
  3. EN 1545-sectoral
    - Sector specific data elements
      - general data elements from EN 1545-1
      - elementary data types from EN 1545-1
    - sector specific code lists
      - codes expressed in ASN.1
  2. EN 1545-1
    - general data elements
      - elementary data types from EN 1545-1
      - universal ASN.1 types from ISO/IEC 8824
    - general data elements with associated code lists

codes expressed in ASN.1  
elementary data types  
universal ASN.1 types from ISO/IEC 8824

1. ISO/IEC 8824  
universal ASN.1 data types

This European Standard refers to existing ASN.1 encoding rules (transfer syntaxes), such as the basic and packed encoding rules, for use within surface transport applications. However this European Standard does not exclude the use of other encoding rules. The abstract syntax notation (ASN.1) has been used in the definition of data types (i.e. ASN.1 types) in this European Standard.

The ASN.1 basic encoding rules (BER) includes significant redundancy in order to make transferred data fully self-defining, which may result in data structures too large to be used in applications on ICs with restricted data storage capacity. Therefore this European Standard allows the use of alternative encoding rules such as the ones based upon the ASN.1 packed encoding rules (PER) (see Clause 9).

This European Standard does not pretend to identify and specify every possible ASN.1 type that may be used in future applications by application builders. In addition, local systems may be defined in their own way.

This European Standard will be updated and added to over time as new surface transport applications are created in the normal CEN practice.

## 1 Scope

This European Standard specifies data formats, data elements and data elements with associated code lists for use within Surface Transport Applications on ICs. This European Standard defines those data elements and code lists related to transport and travel payment and the specific data elements needed for low memory capacity ICs.

The mechanism for how to establish the application context, including the decision of which encoding rules to use, is outside the scope of this European Standard.

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## 2 Normative references

The following referenced documents are indispensable for the application of this European Standard. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 1545-1:2005, *Identification card systems — Surface transport applications — Part 1: Elementary data types, general codelists and general data elements*

ISO 4217, *Codes for the representation of currencies and funds*

## 3 Terms and definitions

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

### 3.1

#### **account**

held in a central location, used for payment for services. When payment is made through the use of a card, the card identifies the centrally held account  
[EN 1545-1:2005]

### 3.2

#### **contract**

specific relationship between a transport service provider and a customer. The contract defines the conditions under which the customer may use the services which are predefined by the service provider. The contract may also indicate how the customer is charged. In public transport, a ticket represents a contract

### 3.3

#### **coupon**

ticket in a group of tickets sold as a group, where each ticket has the same nominal value valid for one journey e.g. a carnet or multi-journey ticket

### 3.4

#### **currency**

unit in which a value is expressed. This may be conventional legal currency or proprietary tokens

### 3.5

#### **customer**

individual or organisation which receives a service in a commercial relationship with a service provider

### 3.6

#### **event**

circumstance which causes data to be written to a machine readable card. This may be an external event or a card event. The card may already be available at the Interface device, or it may be presented, which action may itself create an event

### 3.7

#### **first event**

first of a set of related events which are deemed to constitute a single journey

### 3.8

#### **holder**

person or organisation that is recognised as being the authorised user of the application