SLOVENSKI STANDARD
SIST ENV 14062-2:2018

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Sistemi z identifikacijskimi karticami - Aplikacije za prevoze po kopnem - Elektronsko pobiranje pristojbin - 2. del: Zahteve za sporočila

Identification card systems - Surface transport applications - Electronic fee collection - Part 2: Message requirements

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ICS:

35.240.15	Identifikacijske kartice. Čipne kartice. Biometrija	Identification cards. Chip cards. Biometrics
35.240.60	Uporabniške rešitve IT v prometu	IT applications in transport

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English version

Identification card systems - Surface transport applications - Electronic fee collection - Part 2: Message requirements

This European Prestandard (ENV) was approved by CEN on 10 May 2001 as a prospective standard for provisional application.

The period of validity of this ENV is limited initially to three years. After two years the members of CEN will be requested to submit their comments, particularly on the question whether the ENV can be converted into a European Standard.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
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Contents

Foreword

This European Prestandard 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 Prestandard comprises the following parts, under the general title “Identification card systems – Surface transport applications – Electronic fee collection”:

— *Part 1 : Physical characteristics, electronic signals and transmission protocols*

— *Part 2 : Message requirements*

— *Part 3 : Application and security aspects*

— *Part 4 : Test procedures*

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to announce this European Prestandard: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

Introduction

This European Prestandard is one of a series of Standards describing the characteristics of IC cards used in Electronic Fee Collection (EFC) systems based on

- the Dedicated Short Range Communication (DSRC) ; and
- the Global System for Mobile Communication (GSM) ;

and the characteristics of the interface between those IC cards and the related card interface devices installed in vehicles, so-called On-Board-Units.

It is not envisaged that the complete set of functions and data structures described herein is present in each piece of EFC equipment, be it OBU or ICC. Thus, not every command or file type has to be present in an OBU or an ICC in order for it to be compliant with this European Prestandard.

1 Scope

This European Prestandard specifies directly or by reference the message requirements for integrated circuit(s) cards (ICCs) carrying the EFC application and related requirements for On-Board-Units (OBUs) used in Electronic Fee Collection systems based on Dedicated Short Range Communication and Global System for Mobile Communication, with the target to provide basic interoperability between an ICC and an OBU independently of the respective manufacturers and operators. It takes into consideration both environmental and system related aspects and states minimum requirements of conformity.

The requirements imposed by this Prestandard apply to

- the IC card itself, denoted by the abbreviation ICC ;
- the in-vehicle card interface device, denoted by the abbreviation OBU ; or
- the combination of both.

This Prestandard does not directly set requirements on any other card interface device (IFD) besides the OBU e.g. stationary devices. However, the requirements imposed on the IC card may induce technical consequences for an IFD designed to accept an IC card used in EFC applications.

It specifies the respective characteristics of the ICC and OBU only as far as these may concern the interface, but does not give any internal technical implementation.

2 Normative references

This European Prestandard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Prestandard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

EN 726-3:1994, *Identification card systems – Telecommunications integrated circuit(s) cards and terminals – Part 3 : Application independent card requirements.*

ENV 1545-1:1998, *Identification card systems – Surface transport applications – Part 1 : General data elements.*

ENV 1545-2:1998, *Identification card systems – Surface transport applications – Part 2 : Transport payment related data elements.*

ENV ISO 14906:1998, *Road transport and traffic telematics (RTTT) – Electronic Fee Collection (EFC) – Application interface definition for dedicated short range communications (ISO/TR 14906:1998).*

ETS 300 699, *European digital cellular telecommunications system (Phase 2+) – Specification of the Subscriber Identity Module – Mobile Equipment (SIM – ME) interface (GSM 11.11 V 5.5.0).*

ISO/IEC 7816-3:1997, *Identification cards — Integrated circuit(s) cards with contacts — Part 3 : Electronic signals and transmission protocols.*

ISO/IEC 7816-4:1995, *Identification cards — Integrated circuit(s) cards with contacts — Part 4 : Inter-industry commands for interchange.*

ISO/IEC 7816-5:1994, *Identification cards — Integrated circuit(s) cards with contacts — Part 5 : Numbering system and registration procedure for application identifiers.*

3 Terms and definitions

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

3.1
IC card, ICC
an integrated circuit(s) card used in EFC applications

3.2
interface device, IFD
any interface device foreseen to accept an IC card used in EFC applications

3.3
on-board-unit, OBU
in-vehicle, card interface device, containing DRSC or GSM communication equipment, enabling direct or in-direct communication between an IC card and a roadside beacon or between an IC card and the GSM network

4 Abbreviations

For the purpose of this European Prestandard, the following abbreviations apply throughout the document unless otherwise specified :

EFC	Electronic Fee Collection
AID	Application Identifier, as defined in ISO/IEC 7816-5:1994
APDU	Application Protocol Data Unit, according to ISO/IEC 7816-4:1995
CLA	Class byte, as defined in ISO/IEC 7816-4:1995
DF	Dedicated File, as defined in ISO/IEC 7816-4:1995
DSRC	Dedicated Short Range Communication
EF	Elementary File, as defined in ISO/IEC 7816-4:1995
ICC	See Definitions above
IFD	See Definitions above
INS	Instruction byte, as defined in ISO/IEC 7816-4:1995
L_c	Length of command, as defined in ISO/IEC 7816-4:1995
L_e	Length of expected response, as defined in ISO/IEC 7816-4:1995
LEN	Length field
LRC	Longitudinal Redundancy Check, as defined in ISO/IEC 7816-3:1997
MF	Master File, as defined in ISO/IEC 7816-4:1995
OBU	See Definitions above
P1	Parameter byte 1, as defined in ISO/IEC 7816-4:1995
P2	Parameter byte 2, as defined in ISO/IEC 7816-4:1995
RSE	Roadside Equipment

SFI	Short File Identifier, as defined in ISO/IEC 7816-4:1995
SW1	Status Word 1, as defined in ISO/IEC 7816-4:1995
SW2	Status Word 2, as defined in ISO/IEC 7816-4:1995
TPDU	Transport Protocol Data Unit, according to ISO/IEC 7816-3:1997

5 EFC using DSRC

5.1 Message requirements

This clause describes the basic message requirements, i.e. the set of commands and the data coding scheme.

5.1.1 General

The OBU shall not use the indication $L_e = 00_{16}$ for requesting that the ICC reply with all available data.

NOTE The reason is that the OBU will always know the size of the data requested.

5.1.2 APDU requirements

5.1.2.1 Length of APDU

The OBU need not allow use of the extended length fields for the length L_c of the data field of a Command APDU and for the expected length L_e of the response APDU.

NOTE 1 The reason is that the length of the LLC frame of DSRC is limited to at most 128 bytes.

NOTE 2 Clause 5.3 of ISO/IEC 7816-4:1995 allows for the short (1 byte) as well as the extended (3 bytes) length fields.

5.1.2.2 Mapping of APDUs onto TPDUs

The APDUs of ISO/IEC 7816-4 shall be mapped upon TPDUs for T = 0 as described in ISO/IEC 7816-4:1995, annex A with the restrictions listed in part 1, clause 5.3.6.

The APDUs of ISO/IEC 7816-4 shall be mapped upon TPDUs for T = 1 as described in ISO/IEC 7816-4:1995, annex B with the restrictions listed in part 1, clause 5.3.5.

5.1.3 Command set

The following commands shall as a minimum be available for the purpose of carrying out data exchange between an OBU and an ICC during an EFC transaction. The listings are based on the restrictions mentioned in clause 5.2 below, regarding addressing.

The CLA byte shall be equal to zero for all interindustry commands. The format of the commands, when used in secure messaging, is described in part 3 of this standards series.

5.1.3.1 Command overview

The OBU and the ICC shall support the following subset of commands as defined in ISO/IEC 7816-4:1995 :

- read binary ISO/IEC 7816-4:1995, clause 6.1 ;
- select file ISO/IEC 7816-4:1995, clause 6.11 ;
- get response ISO/IEC 7816-4:1995, clause 7.1.