SLOVENSKI STANDARD
SIST-TS CEN ISO/TS 25110:2009

01-april-2009

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Electronic fee collection - Interface definition for on-board account using integrated circuit card (ICC) (ISO/TS 25110:2008)

Schnittstellendefinition für die fahrzeugseitige bordeigene Datenverwaltung mit Chipkarte (ISO/TS 25110:2008)

Perception du télépéage - Définition d'interface pour compte de bord utilisant une carte à circuit intégré (ICC) (ISO/TS 25110:2008)

Ta slovenski standard je istoveten z: CEN ISO/TS 25110:2008

ICS:

03.220.01	Transport na splošno	Transport in general
35.240.60	Uporabniške rešitve IT v transportu in trgovini	IT applications in transport and trade

SIST-TS CEN ISO/TS 25110:2009   en

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TECHNICAL SPECIFICATION

SPÉCIFICATION TECHNIQUE

TECHNISCHE SPEZIFIKATION

CEN ISO/TS 25110

November 2008

ICS 35.240.60; 03.220.01

English Version

Electronic fee collection - Interface definition for on-board account using integrated circuit card (ICC) (ISO/TS 25110:2008)

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This Technical Specification (CEN/TS) was approved by CEN on 3 November 2008 for provisional application.

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Ref. No. CEN ISO/TS 25110:2008: E

CEN ISO/TS 25110:2008 (E)

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Foreword

This document (CEN ISO/TS 25110:2008) has been prepared by Technical Committee ISO/TC 204 "Transport information and control systems" in collaboration with Technical Committee CEN/TC 278 "Road transport and traffic telematics", the secretariat of which is held by NEN.

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Endorsement notice

The text of ISO/TS 25110:2008 has been approved by CEN as CEN ISO/TS 25110:2008 without any modification.

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TECHNICAL
SPECIFICATION

ISO/TS
25110

First edition
2008-11-15

Electronic fee collection — Interface definition for on-board account using integrated circuit card (ICC)

Perception du télépéage — Définition d'interface pour compte de bord utilisant une carte à circuit intégré (ICC)

Reference number
ISO/TS 25110:2008(E)

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ISO/TS 25110:2008(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.

In other circumstances, particularly when there is an urgent market requirement for such documents, a technical committee may decide to publish other types of document:

— an ISO Publicly Available Specification (ISO/PAS) represents an agreement between technical experts in an ISO working group and is accepted for publication if it is approved by more than 50 % of the members of the parent committee casting a vote;

— an ISO Technical Specification (ISO/TS) represents an agreement between the members of a technical committee and is accepted for publication if it is approved by 2/3 of the members of the committee casting a vote.

An ISO/PAS or ISO/TS is reviewed after three years in order to decide whether it will be confirmed for a further three years, revised to become an International Standard, or withdrawn. If the ISO/PAS or ISO/TS is confirmed, it is reviewed again after a further three years, at which time it must either be transformed into an International Standard or be withdrawn.

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/TS 25110 was prepared by Technical Committee ISO/TC 204, *Intelligent transport systems*, and CEN/TC 278, *Road transport and traffic telematics*.

0 Introduction

0.1 Background and motivation

There are two payment systems dealing with electronic fee collection (EFC). The first is the central account system using a one-piece on-board unit (OBU), and the second is the on-board account system using a payment media such as the integrated circuit card (ICC).

ICCs have been widely used for public transport cards such as subway and bus payment means, and electronic money cards for general purpose payments, as well as for credit cards and banking cards. ICC is expected to be used for EFC payment means along with these global trends and provides convenience and flexibility.

Currently, the descriptions in the existing EFC related international standards are focused on the central account system, which is rather simple and gives more feasibility for EFC interoperability than the on-board account system, which is complex and has more items to be settled.

With consideration of widespread use for transport cards or electronic money cards, a new international standard relating the on-board account system using those ICCs is strongly required as shown in Figure 1. Furthermore, a state-of-the-art mobile phone integrated with ICC functions, a so-called "mobile electronic purse", has been used for public transport or retail shopping as a payment means in some countries so rapidly that standardization on this theme is important and essential for considering future EFC payment methods as well.
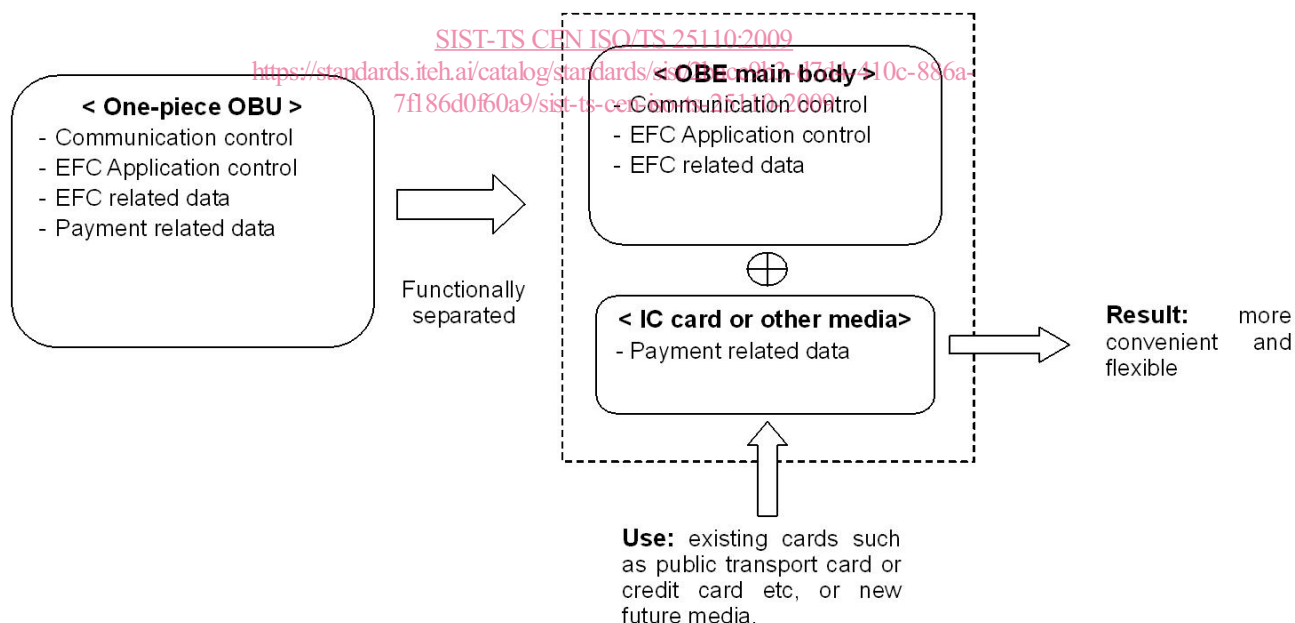

Figure 1 — Motivation for on-board account using ICC

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Figure 2 shows the scope of the EFC standards, in which the OBU is used as a communication means and the ICC caries the payment means.
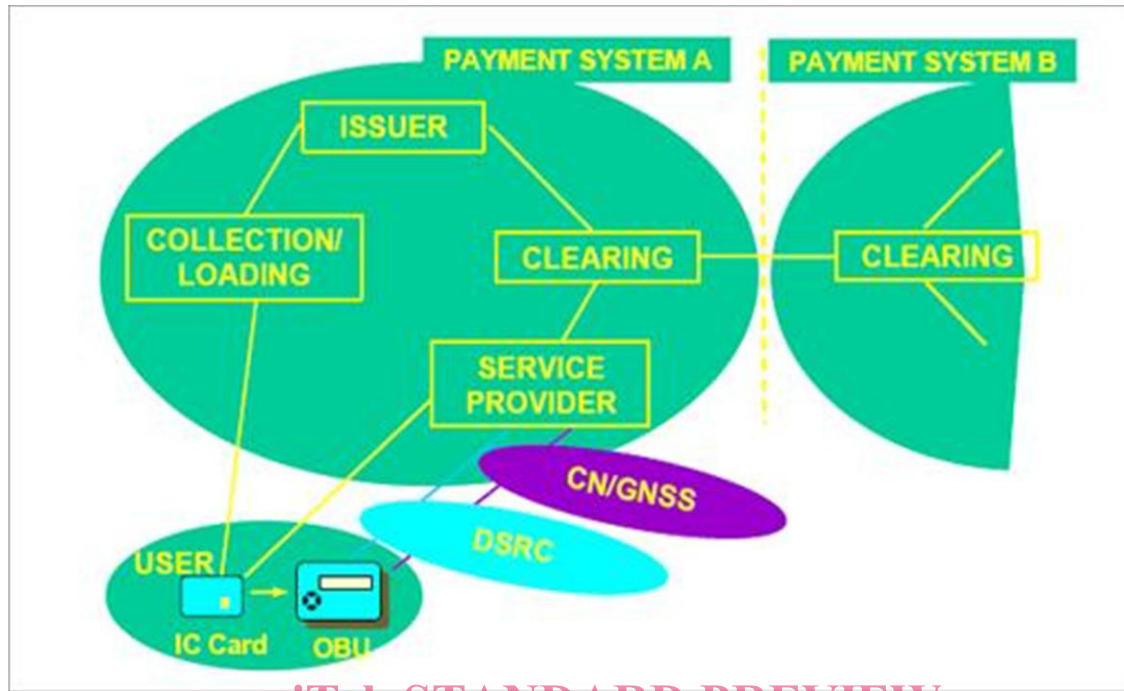

Figure 2 — Illustration of the scope of the EFC standards

0.2 Objective

The objective of this Technical Specification is to classify data transfer models based on operational requirements, and define a specific ICC access interface for on-board account using ICC for each model. Furthermore, this Technical Specification provides practical examples of transactions in Annex B, for consideration and easy adoption by toll road operators.

0.3 Use

This Technical Specification provides a common technical platform for on-board accounts using ICCs to deal with various operational requirements, and practical examples of on-board accounts actually used or planned in several countries.

Each toll road operator can establish their own specification by selecting an example of the models in the standard (like a tool box) so as to meet their requirements.

TECHNICAL SPECIFICATION   **ISO/TS 25110:2008(E)**

Electronic fee collection — Interface definition for on-board account using integrated circuit card (ICC)

1 Scope

This Technical Specification defines the data transfer models between roadside equipment (RSE) and ICC, and the interface descriptions between RSE and OBE for on-board account using ICC. It also provides examples of interface definitions and transactions deployed in several countries.

This Technical Specification covers:

— data transfer models between RSE and ICC which correspond to the categorized operational requirements, and the data transfer mechanism for each model;

— interface definition between RSE and OBE based on each data transfer model;

— interface definition for each model comprises

    — functional configuration,

    — RSE command definitions for ICC access, and

    — data format and data element definitions of RSE commands;

— a transaction example for each model in Annex B.

Figure 3 shows the configuration of on-board account and the scope of the standard. The descriptions in this Technical Specification focus on the interface between RSE and OBU to access ICC.
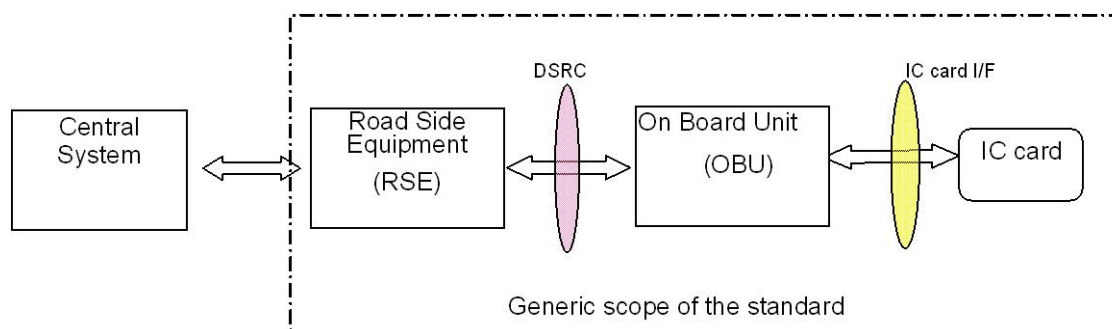

Figure 3 — Configuration of on-board account and generic scope of ISO/TS 25110

Figure 4 shows the layer structure of RSE, OBU, and ICC where the mid-layer of application interfaces are denoted as the practical scope of this Technical Specification.

NOTE   The existing standards for physical and other protocol layers both between RSE and OBE, and between OBE and ICC, are outside the scope of this Technical Specification. For example, DSRC related items (L-1, L-2, and L-7) and ICC related items (ICC commands, data definition, etc.) are outside the scope of this Technical Specification.