SLOVENSKI STANDARD
SIST-TS CEN ISO/TS 14907-2:2006

01-september-2006

Cestna transportna in prometna telematika – Elektronsko pobiranje cestnine – Postopki za preskušanje opreme – 2. del: Preskus skladnosti za aplikacijski vmesnik vgrajene enote za elektronsko cestninjenje (ISO/TS 14907-2:2006)

Road transport and traffic telematics - Electronic fee collection - Test procedures for user and fixed equipment - Part 2: Conformance test for the onboard unit application interface (ISO/TS 14907-2:2006)

Straßentransport- und Verkehrstelematik - Elektronische Gebührenerhebung (EFC) - Teil 2: EFC-Anpassung der Testspezifikation an die Anwenderschnittstelle (ISO/TS 14907-2:2006)

Télématique de la circulation et du transport routier - Perception du télépéage - Modes opératoires relatifs aux équipements embarqués et aux équipements fixes - Partie 2: Essai de conformité de l'interface d'application de l'unité embarquée (ISO/TS 14907-2:2006)

Ta slovenski standard je istoveten z: **CEN ISO/TS 14907-2:2006**

ICS:

35.240.60	Uporabniške rešitve IT v transportu in trgovini	IT applications in transport and trade
43.040.15	Avtomobilska informatika. Vgrajeni raļ unalniġki sistemi *Vkljuļ no z navigacijskimi sistemi, avtoradiji, itn	Car informatics. On board computer systems

SIST-TS CEN ISO/TS 14907-2:2006 **en**

TECHNICAL SPECIFICATION

SPÉCIFICATION TECHNIQUE

TECHNISCHE SPEZIFIKATION

CEN ISO/TS 14907-2

June 2006

ICS 43.040.15; 35.240.60

English Version

Road transport and traffic telematics - Electronic fee collection - Test procedures for user and fixed equipment - Part 2: Conformance test for the onboard unit application interface (ISO/TS 14907-2:2006)

Télématique de la circulation et du transport routier - Perception du télépéage - Modes opératoires relatifs aux équipements embarqués et aux équipements fixes - Partie 2: Essai de conformité de l'interface d'application de l'unité embarquée (ISO/TS 14907-2:2006)

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This Technical Specification (CEN/TS) was approved by CEN on 28 February 2005 for provisional application.

The period of validity of this CEN/TS 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 CEN/TS can be converted into a European Standard.

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Management Centre: rue de Stassart, 36 B-1050 Brussels

Ref. No. CEN ISO/TS 14907-2:2006: E

Foreword

This document (CEN ISO/TS 14907-2:2006) 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".

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

TECHNICAL SPECIFICATION

ISO/TS 14907-2

First edition
2006-06-15

Road transport and traffic telematics — Electronic fee collection — Test procedures for user and fixed equipment —

Part 2: Conformance test for the onboard unit application interface

Télématique de la circulation et du transport routier — Perception du télépéage — Modes opératoires relatifs aux équipements embarqués et aux équipements fixes —
Partie 2: Essai de conformité de l'interface d'application de l'unité embarquée

Reference number
ISO/TS 14907-2:2006(E)

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Published in Switzerland

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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 normative 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 14907-2 was prepared by Technical Committee ISO/TC 204, *Intelligent transport systems*.

ISO/TS 14907 consists of the following parts, under the general title *Road transport and traffic telematics — Electronic fee collection — Test procedures for user and fixed equipment:*

— *Part 1: Description of test procedures*

— *Part 2: Conformance test for the onboard unit application interface*

Introduction

This CEN/ISO Technical Specification describes tests that verify OBU conformance of implementations of functions and data structures for EFC applications.

Road transport and traffic telematics — Electronic fee collection — Test procedures for user and fixed equipment —

Part 2: Conformance test for the onboard unit application interface

1 Scope

This CEN/ISO Technical Specification describes tests that verify OBU conformance of implementations of functions and data structures, as defined in the implementation conformance statement based on ISO 14906, for EFC applications. After the tests of isolated data items and functions (C.1-C.2), an example is given for testing of a complete EFC transaction (C.3).

The scope of this CEN/ISO Technical Specification comprises definitions of OBU conformance assessment tests of:

— Basic DSRC L7 functionality;

— EFC application functions;

— EFC attributes (i.e. EFC application information);

— the addressing procedures of EFC attributes and (hardware) components (e.g. ICC and MMI);

— the EFC transaction model, which defines the common elements and steps of any EFC transaction; and

— the behaviour of the interface so as to support interoperability on an EFC-DSRC application interface level.

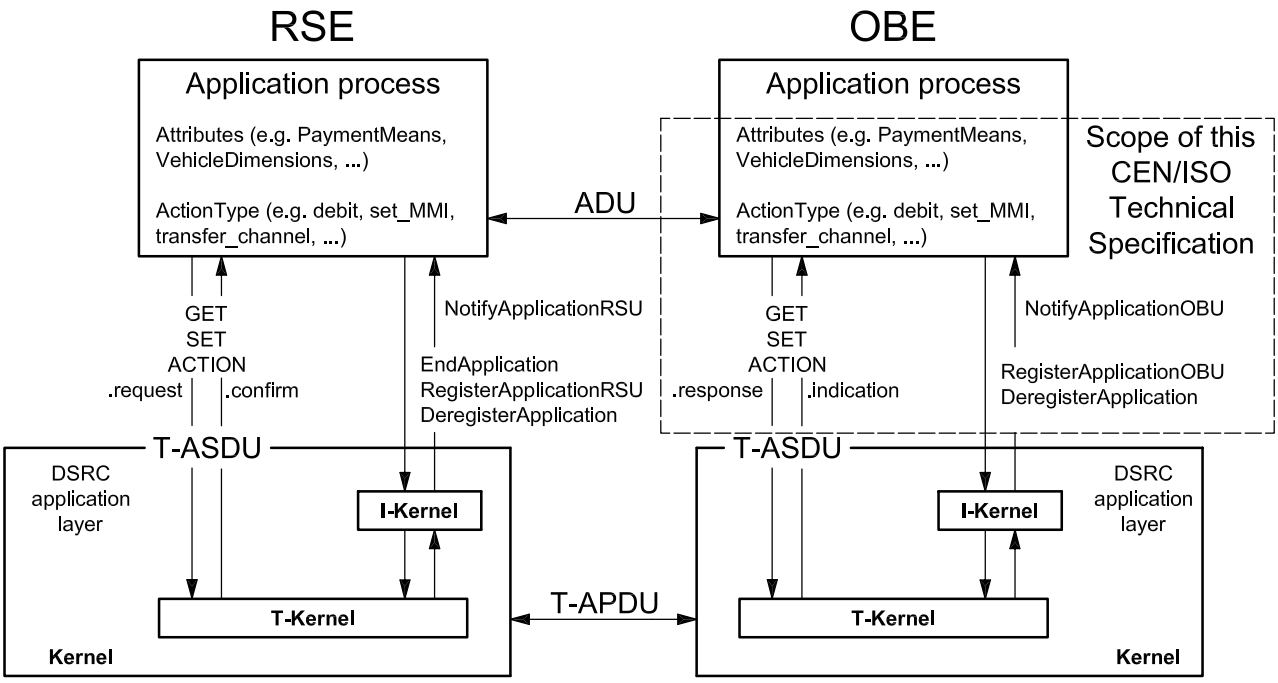

Figure 1 — The EFC application interface

The purpose of this CEN/ISO Technical Specification is to define tests that:

— assess OBU capabilities;

— assess OBU behaviour;

— serve as a guide for OBU conformance evaluation and type approval;

— achieve comparability between the results of the corresponding tests applied in different places at different times; and

— facilitate communications between parties.

Whereas this Technical Specification defines examples of test cases for DSRC and EFC functionality in Annex C, it does not intend to specify a complete test suite for a certain implementation. To compose a test suite for a specific EFC implementation, the test cases may have to be modified and new test cases may have to be defined and added in order for the conformance test to be complete. It may be useful to take into account the following considerations when defining a complete test suite:

— Small range: “exhaustive testing” of critical interoperability/compatibility features;

— Large range: testing of boundaries and random values;

— Composite types: testing of individual items in sequence or parallel.

Figure 2 shows the overall procedure of conformance testing.

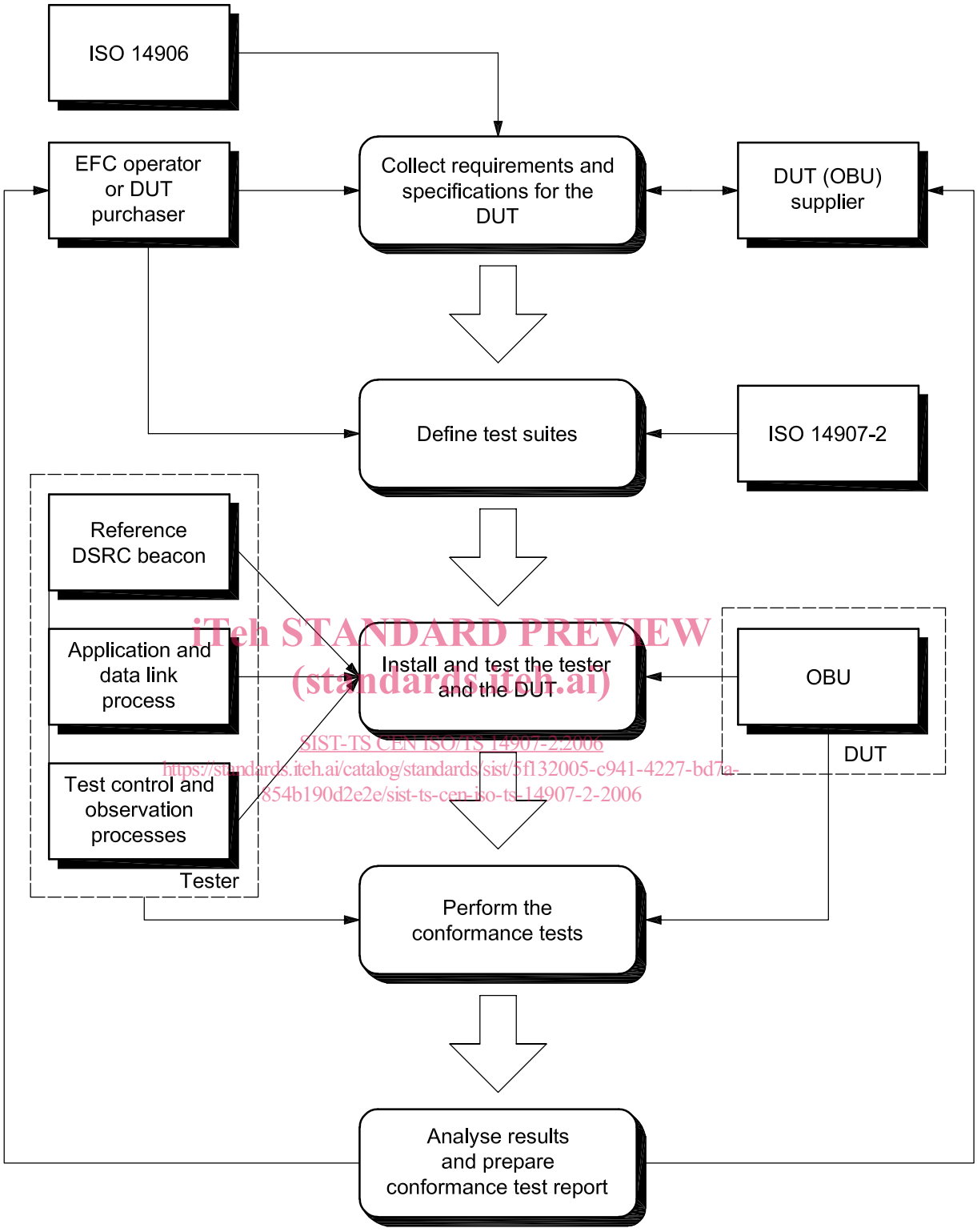

Figure 2 — Conformance testing process

Figure 3 gives a more detailed picture of the interface between the entity performing the conformance test and the supplier of the Device Under Test (DUT). By the EFC application specification, the implementation conformance statement pro forma and the implementation extra information for testing pro forma the supplier is requested to provide the DUT (OBU), containing the Implementation Under Test (IUT), as well as the documentation needed to perform the tests. More details on the content of the different documents are given in Clause 5 on OBU and supporting information.

NOTE 1 The Device Under Test contains the Implementation Under Test.

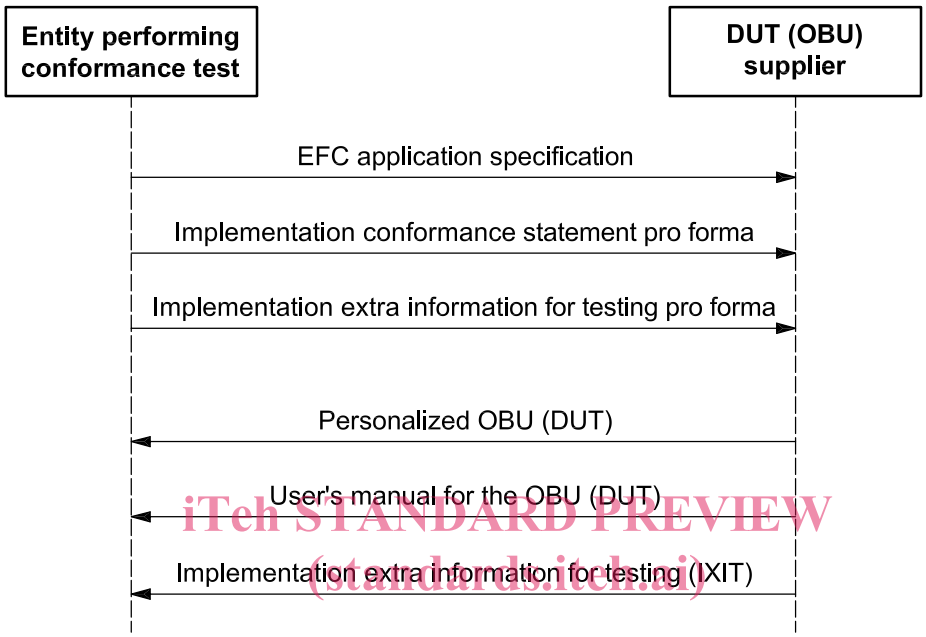

Figure 3 — Documentation DUT supplier

It is outside the scope of this CEN/ISO Technical Specification to define tests that assess:

— performance;

— robustness; and

— reliability of an implementation.

NOTE 2 ISO/TS 14907-1 defines test procedures that are aimed at assessing performance, robustness and reliability of EFC equipment and systems.

NOTE 3 The ISO/IEC 10373 family of International Standards defines test methods for proximity, vicinity, integrated circuits(s) cards and related devices that may be relevant for OBUs that support such cards.

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/IEC 8824-1, *Information technology — Abstract Syntax Notation One (ASN.1): Specification of basic notation*

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

ISO/IEC 9646-1, *Information technology — Open Systems Interconnection — Conformance testing methodology and framework — Part 1: General concepts*

ISO 14906:2004, *Road transport and traffic telematics — Electronic fee collection — Application interface definition for dedicated short-range communication*

ISO/TS 14907-1, *Road transport and traffic telematics — Electronic fee collection — Test procedures for user and fixed equipment — Part 1: Description of test procedures*

ISO/TS 17574, *Road transport and traffic telematics — Electronic fee collection (EFC) — Guidelines for EFC security protection profiles*

EN 12253, *Road transport and traffic telematics — Dedicated short-range communication — Physical layer using microwave at 5,8 GHz*

EN 12795, *Road transport and traffic telematics — Dedicated short-range communication (DRSC) — DRSC data link layer: medium access and logical link control*

EN 12834, *Road transport and traffic telematics — Dedicated short-range communication (DRSC) — DRSC application layer*

EN 13372, *Road transport and traffic telematics (RTTT) — Dedicated short-range communication — Profiles for RTTT applications*

3 Terms and definitions

For the purposes of this document, the following definitions apply.

3.1
access credentials
data that is transferred to OBE in order to establish the claimed identity of an RSE application process entity

[ISO 14906]

NOTE The access credentials carry information needed to fulfil access conditions in order to perform the operation on the addressed element in the OBE. The access credentials can carry passwords as well as cryptographic based information such as authenticators.

3.2
action
function that an application process resident at the RSE can invoke in order to make the OBE execute a specific operation during the transaction

[ISO 14906]

3.3
attribute
application information formed by one or by a sequence of data elements, which is managed by different actions used for implementation of a transaction

[ISO 14906]

3.4
authenticator
data appended to, or a cryptographic transformation of, a data unit that allows a recipient of the data unit to prove the source and/or the integrity of the data unit and protect against forgery