

SVENSK STANDARD

SS-EN ISO 14907-2:2021

**Intelligenta transportsystem – Elektronisk vägavgiftsupptagning
– Provning av fast och fordonsmonterad utrustning –
Del 2: Provning av applikationsgränssnittet hos enheter i
fordonet för kontroll av överensstämmelse (ISO 14907-2:2021)**

**Electronic fee collection – Test procedures for user and
fixed equipment –
Part 2: Conformance test for the on-board unit application
interface (ISO 14907-2:2021)**



Language: engelska/English

Edition: 1

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Europastandarden EN ISO 14907-2:2021 gäller som svensk standard. Detta dokument innehåller den officiella engelska versionen av EN ISO 14907-2:2021.

The European Standard EN ISO 14907-2:2021 has the status of a Swedish Standard. This document contains the official version of EN ISO 14907-2:2021.

LÄSANVISNINGAR FÖR STANDARDER

I dessa anvisningar behandlas huvudprinciperna för hur regler och yttre begränsningar anges i standardiseringsprodukter.

Krav

Ett krav är ett uttryck i ett dokumentets innehåll som anger objektivet verifierbara kriterier som ska uppfyllas och från vilka ingen avvikelse tillåts om efterlevnad av dokumentet ska kunna åberopas. Krav uttrycks med hjälpverbet ska (eller ska inte för förbud).

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En rekommendation är ett uttryck i ett dokumentets innehåll som anger en valmöjlighet eller ett tillvägagångssätt som bedöms vara särskilt lämpligt utan att nödvändigtvis nämna eller utesluta andra. Rekommendationer uttrycks med hjälpverbet bör (eller bör inte för avrådanden).

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Instruktioner anges i imperativ form och används för att ange hur något görs eller utförs. De kan underordnas en annan regel, såsom ett krav eller en rekommendation. De kan även användas självständigt, och är då att betrakta som krav.

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En förklaring är ett uttryck i ett dokumentets innehåll som förmedlar information. En förklaring kan uttrycka tillåtelse, möjlighet eller förmåga. Tillåtelse uttrycks med hjälpverbet får (eller motsatsen behöver inte). Möjlighet och förmåga uttrycks med hjälpverbet kan (eller motsatsen kan inte).

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These instructions cover the main principles for the use of provisions and external constraints in standardization deliverables.

Requirement

A requirement is an expression, in the content of a document, that conveys objectively verifiable criteria to be fulfilled, and from which no deviation is permitted if conformance with the document is to be claimed. Requirements are expressed by the auxiliary shall (or shall not for prohibition).

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A recommendation is an expression, in the content of a document, that conveys a suggested possible choice or course of action deemed to be particularly suitable, without necessarily mentioning or excluding others. Recommendations are expressed by the auxiliary should (or should not for dissuasion).

Instruction

An instruction is expressed in the imperative mood and is used in order to convey an action to be performed. It can be subordinated to another provision, such as a requirement or a recommendation. It can also be used independently and is then to be regarded as a requirement.

Statement

A statement is an expression, in the content of a document, that conveys information. A statement can express permission, possibility or capability. Permission is expressed by the auxiliary may (its opposite being need not). Possibility and capability are expressed by the auxiliary can (its opposite being cannot).

EUROPEAN STANDARD

EN ISO 14907-2

NORME EUROPÉENNE

EUROPÄISCHE NORM

April 2021

ICS 35.240.60; 43.040.15

Supersedes CEN ISO/TS 14907-2:2016

English Version

Electronic fee collection - Test procedures for user and fixed equipment - Part 2: Conformance test for the on-board unit application interface (ISO 14907-2:2021)

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 14907-2:2021)

Elektronische Gebührenerhebung - Testverfahren für straßenseitige und fahrzeugseitige Einrichtungen - Teil 2: Konformitätsprüfungen für die Anwendungsschnittstelle der fahrzeugseitigen Einrichtung (ISO 14907-2:2021)

This European Standard was approved by CEN on 21 January 2021.

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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 CEN-CENELEC Management Centre has the same status as the official versions.

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COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

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Contents

Page

Foreword	vii
European foreword	viii
Introduction	ix
1 Scope	1
2 Normative references	2
3 Terms and definitions	2
4 Abbreviated terms	4
5 OBU and supporting information	5
5.1 General	5
5.2 ICS.....	8
5.3 IXIT.....	8
6 Testing requirements	9
6.1 EFC application interface	9
6.2 Conceptual test architecture.....	9
6.3 Conformance test system	10
6.3.1 Generalities.....	10
6.3.2 Functionality of tester.....	11
6.3.3 Conformance testing.....	11
6.4 Test documentation	12
6.4.1 Generalities.....	12
6.4.2 Tester	12
6.4.3 Test methods and test cases	12
6.4.4 Test results.....	12
Annex A (normative) Implementation conformance statement proforma	13
Annex B (normative) Implementation of extra information for testing proforma	28
Annex C (informative) OBU test cases	33
Annex D (informative) OBE conformance test procedures conducted in Japan	72
Bibliography	77

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.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 204, *Intelligent transport systems*, in collaboration with the European Committee for Standardization (CEN) Technical Committee CEN/TC 278, *Intelligent transport systems*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

This first edition cancels and replaces the third edition (ISO/TS 14907-2:2016), which has been technically revised.

The main changes compared to the previous edition are as follows:

- EFC application interface (i.e. [6.1](#)) has been added;
- the terms have been revised and aligned with ISO/TS 17573-2:2020.

A list of all parts in the ISO 14907 series can be found on the ISO website.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

European foreword

This document (EN ISO 14907-2:2021) has been prepared by Technical Committee ISO/TC 204 "Intelligent transport systems" in collaboration with Technical Committee CEN/TC 278 "Intelligent transport systems" the secretariat of which is held by NEN.

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 October 2021, and conflicting national standards shall be withdrawn at the latest by October 2021.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN shall not be held responsible for identifying any or all such patent rights.

This document supersedes CEN ISO/TS 14907-2:2016.

According to the CEN-CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

Endorsement notice

The text of ISO 14907-2:2021 has been approved by CEN as EN ISO 14907-2:2021 without any modification.

Introduction

This document describes tests that verify on-board unit (OBU) conformance of functions and data structures implementations for electronic fee collection (EFC) applications.

The purpose of this document 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.

Electronic fee collection — Test procedures for user and fixed equipment —

Part 2: Conformance test for the on-board unit application interface

1 Scope

This document describes tests which verify on-board unit (OBU) conformance of functions and data structures implementations, as defined in the implementation conformance statement (ICS) based on ISO 14906 for EFC applications.

This document defines tests for assessing OBU conformance in terms of :

- basic dedicated short-range communication (DSRC) L7 functionality,
- EFC application functions,
- EFC attributes (i.e. EFC application information),
- the addressing procedures of EFC attributes and (hardware) components,
- 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.

After the tests of isolated data items and functions ([C.2](#) to [C.4](#)), an example is given for testing a complete EFC transaction ([C.3](#)). Although this document defines examples of test cases for DSRC and EFC functionality (see [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 can be modified and new test cases can be defined and added in order for the conformance test suite to be complete. It can be useful to consider the following when defining a complete test suite:

- small range: “exhaustive testing” of critical interoperability/compatibility features,
- large range: testing of boundaries and random values, and
- composite types: testing of individual items in sequence or parallel.

This document does not define tests which assess:

- performance,
- robustness, and
- reliability of an implementation.

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

NOTE 2 The ISO/IEC 10373 series defines test methods for proximity, vicinity, integrated circuit(s) cards and related devices that can be relevant for OBUs which support such cards.

[Annex D](#) provides an informative overview of Japanese on-board equipment (OBE) conformance tests which are based on the ISO 14907 series, in order to illustrate how these can be applied in practice.