

PD CEN ISO/TS 14907-1:2015



BSI Standards Publication

Electronic fee collection — Test procedures for user and fixed equipment

Part 1: Description of test procedures

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National foreword

This Published Document is the UK implementation of CEN ISO/TS 14907-1:2015. It supersedes DD CEN ISO/TS 14907-1:2010 which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee EPL/278, Intelligent transport systems.

A list of organizations represented on this committee can be obtained on request to its secretary.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

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English Version

Electronic fee collection - Test procedures for user and
fixed equipment - Part 1: Description of test procedures
(ISO/TS 14907-1:2015)

Perception du télépéage - Modes opératoires relatifs
aux équipements embarqués et aux équipements fixes -
Partie 1: Description des modes opératoires (ISO/TS
14907-1:2015)

Elektronische Gebührenerhebung - Testverfahren für
straßenseitige und fahrzeugsseitige Einrichtungen - Teil
1: Beschreibung von Testverfahren (ISO/TS 14907-
1:2015)

This Technical Specification (CEN/TS) was approved by CEN on 10 August 2015 for prEN 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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European foreword

This document (CEN ISO/TS 14907-1:2015) 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.

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

This document supersedes CEN ISO/TS 14907-1:2010.

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association.

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

Endorsement notice

The text of ISO/TS 14907-1:2015 has been approved by CEN as CEN ISO/TS 14907-1:2015 without any modification.

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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.

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 on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT) see the following URL: [Foreword - Supplementary information](#)

The committee responsible for this document is ISO/TC 204, *Intelligent transport systems*.

This third edition cancels and replaces the second edition (ISO/TS 14907-1:2010). It also incorporates the Technical Corrigenda ISO/TS 14907-1:2010/Cor.1:2010. The main changes are related to the revision of the references.

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

- *Part 1: Description of test procedures*
- *Part 2: Conformance test for the on-board unit application interface*

Introduction

For an electronic fee collection (EFC) system, approvals and tests are required to determine whether the system (or individual components of the system) conforms to standards and application requirements and to enable parameters such as quality, availability, and maintainability to be measured.

There are complete EFC systems available, including documentation and approvals, and these could already be in operation in some European countries. This part of ISO/TS 14907 provides a toolbox of tests and procedures for the assessment and proof of such EFC systems that they are suitable for specified EFC applications under specific operational conditions. Dependent on a system to be tested and based on the available documentation and the status of previously performed approvals, this part of ISO/TS 14907 enables parties involved, e.g. system provider, operators, and test houses, to take into consideration already proven references and to identify such parameters which still have to be tested according to the specified applications.

At the time of publication of this part of ISO/TS 14907, the determination of common system requirements for Europe (or any other region) has not been agreed. For this reason, this part of ISO/TS 14907 does not specify any particular performance requirements, unless these are already determined elsewhere (such as safety or radio regulations), but rather identifies the key parameters which will comprise such requirements. Where reference to an existing test is available, this part of ISO/TS 14907 provides that reference. This part of ISO/TS 14907 defines only the test and test procedures, not the benchmark figures that these are to be measured against. Benchmark figures which the systems or components under test can be compared with and validated against might form the subject of a future part of this Technical Specification. Within the framework of the European Electronic Toll System (EETS), this part of ISO/TS 14907 could provide inputs for the work of the notified bodies in view to certify the different systems' part of the EETS in particular to check the suitability for use.

This part of ISO/TS 14907 is furthermore limited to automated (electronic) payment using a standardized dedicated short-range communication (DSRC). The scope of this part of ISO/TS 14907 does not include manual payment, conventional money transaction, nor payment by means of sticker, vignettes, tickets, or magnetic-stripe cards etc. The applications to which EFC is related are toll collection, road pricing, parking, and individual traffic information.

This part of ISO/TS 14907 enables groups of operators to determine common specific performance levels and operating conditions and to enable regional variation where appropriate. It provides operating and environmental parameters (or classes of operating and environmental parameters) within which such systems shall successfully function without impairing interoperability to ensure that the person who specified the system can state their requirements clearly to implementation designers and integrators and to enable the measurement of the performance of such systems.

The following guidelines have been followed when selecting the test procedures for test parameters:

- reference as far as possible to existing standardized test procedures;
- focusing on those tests that are essential to ensure that EFC equipment is able to exchange information and mutually use the exchanged information.

A more guide describing how to use this part of ISO/TS 14907 is provided by [Annex A](#).

While this part of ISO/TS 14907 relates to general test procedures, certain provisions relate specifically to test procedures for certification purposes. Many features of this part of ISO/TS 14907 are relevant internationally; it is recognized that due to different regulatory requirements outside Europe, extension may be required to make its applicability as comprehensive in non-EU countries, before this International Standard can be reviewed for acceptance as in EU countries.

The ISO/TS 17444 series provides an examination framework for EFC charging performance.

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

Part 1: Description of test procedures

1 Scope

This part of ISO/TS 14907 specifies the test procedures of EFC roadside equipment (RCE) and on-board equipment (OBE) with regard to the conformance to standards and requirements for type approval and acceptance testing which is within the realm of EFC application specifically.

The scope of this part of ISO/TS 14907 is restricted to systems operating within the radio emission, electromagnetic compatibility (EMC) regulations, traffic, and other regulations of the countries in which they are operated.

This part of ISO/TS 14907 identifies a set of suitable parameters and provides test procedures to enable the proof of a complete EFC system, as well as components of an EFC system, e.g. OBE, related to the defined requirements of an application. The defined parameters and tests are assigned to the following groups of parameters:

- functionality;
- quality;
- referenced pre-tests.

An overview of the tests and parameters provided by this part of ISO/TS 14907 is given in [5.1](#) and [5.2](#).

This part of ISO/TS 14907 describes procedures, methods and tools, and a test plan which shows the relation between all tests and the sequence of these tests. It lists all tests that are required to measure the performance of EFC equipment. It describes which EFC equipment is covered by the test procedures; the values of the parameters to be tested are not included. It also describes how the tests are to be performed and which tools and prerequisites are necessary before this series of tests can be undertaken. It is assumed that the security of the system is inherent in the communications and EFC functionality tests, therefore they are not addressed here. All tests in this part of ISO/TS 14907 provide instructions to evaluate the test results.

The test procedures can be used for prototype testing, type approvals, test of installations, and periodic inspections. Thus this part of ISO/TS 14907 defines only the test and test procedures, not the benchmark figures that these are to be measured against.

Related to a conceptual model of an EFC system, this part of ISO/TS 14907 relates only to the equipment of the user and the service provider as illustrated in [Figure 1](#). Any other entities are outside the scope of this part of ISO/TS 14907.