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BSI Standards Publication

Electronic fee collection – Evaluation of implementation for conformity to CEN/TS 16986

Part 1: Test suite structure and purposes

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National foreword

This Published Document is the UK implementation of CEN/TS 17154-1:2019.

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

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Electronic fee collection - Evaluation of implementation for conformity to CEN/TS 16986 - Part 1: Test suite structure and purposes

Elektronische Gebührenerhebung - Konformitätsevaluierung von Implementierungen nach CEN/TS 16986 - Teil 1: Struktur der Testfolge und Testabsichten

This Technical Specification (CEN/TS) was approved by CEN on 8 March 2019 for provisional application.

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European foreword

This document (CEN/TS 17154-1:2019) has been prepared by 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 shall not be held responsible for identifying any or all such patent rights.

CEN/TS 17154, *Electronic fee collection — Evaluation of implementation for conformity to CEN/TS 16986*, consists of two parts:

— *Part 1: Test suite structure and purposes* (this document); and

— *Part 2: Abstract test suite*.

According to the CEN/CENELEC Internal Regulations, the national standards organisations 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, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

Introduction

The standard on information exchange between service provision and toll charging (i.e. EN ISO 12855) is a so-called toolbox standard. It provides the foundation for interoperability, but is not sufficient to achieve technical interoperability. The interoperable application profile specified in CEN/TS 16986 makes choices amongst the options which EN ISO 12855 provides and defines a coherent set of transactions, triggers and data elements for an interoperable data exchange at the interface between toll service providers and toll chargers. The interoperable application profile supports both:

— dedicated short-range communication (DSRC)-based systems; and

— global navigation satellite systems /cellular network (GNSS/CN)-based – autonomous systems.

This document provides the specification for testing the conformity of technical implementations to CEN/TS 16986. Technical implementations which can be tested using the specifications included in this document are:

— central equipment of toll chargers; and

— central equipment of toll service providers.

While this Part of CEN/TS 17154 describes the tests on a higher abstract level (TSS&TP) which is human readable, CEN/TS 17154-2 uses the test notation TTCN-3 to provide a test specification that can be compiled and executed in test environments.

For the presentation of the test purposes the formal test purpose language (TPLan) is used. TPLan is standardized by ETSI (e.g. in ETSI ES 202 553 and in the ETSI ES 203 119 series) for the explicit purpose of applying a harmonized notation for test purpose descriptions.

The associated requirements specification CEN/TS 16986 supports the implementation of interoperability in general and of European electronic toll service (EETS) in particular. The technical requirements defined in CEN/TS 16986 correspond to requirements listed in Commission Decision 2009/750/EC. CEN/TS 16986:2016, Table D.1 provides a list that outlines how requirements in CEN/TS 16986:2016 relate to essential requirements in European legislation. Consequently, the CEN/TS 17154 series supports the EETS in terms of providing a set of standardized test specifications to evaluate conformance of implementation of toll chargers and toll service providers – including implementations that provide interoperability.

1 Scope

This document specifies the test suite structure (TSS) and test purposes (TP) to test conformity of central equipment of both toll chargers and toll service providers versus CEN/TS 16986.

It further provides templates for the protocol conformance test reports (PCTR) for the implementation under tests (IUT) for both the toll charger and the toll service provider.

This document contains the technical provisions to perform conformance testing of functional and dynamic behaviour of implementations conforming to CEN/TS 16986.

NOTE The specifications in this Part provide the base for the tree and tabular combined notation (TTCN) of the test cases and steps which are provided in CEN/TS 17154-2.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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.

CEN/TS 16986:2016, *Electronic Fee Collection - Interoperable application profiles for information exchange between Service Provision and Toll Charging*

EN ISO 12855:2015, *Electronic fee collection - Information exchange between service provision and toll charging (ISO 12855:2015)*

ETSI ES 202 553 (V1.2.1:2009-06), *Methods for Testing and Specification (MTS), TPLan: A notation for expressing Test Purposes*

3 Terms and definitions

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

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at http://www.electropedia.org/
- ISO Online browsing platform: available at http://www.iso.org/obp

3.1
attribute
addressable package of data consisting of a single data element or structured sequences of data elements

[SOURCE: EN ISO 17575-1:2016, 3.2]

3.2
authentication
security mechanism allowing verification of the provided identity

[SOURCE: EN 301 175 V1.1.1 (1998-08), Clause 3]