

<b>STN</b>	<b>Elektronický výber poplatkov Interoperabilný aplikačný profil na výmenu informácií medzi poskytovaním služieb a spoplatnením mýta</b>	<b>STN EN 16986</b>  01 8651
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Electronic fee collection - Interoperable application profiles for information exchange between service provision and toll charging

Táto norma obsahuje anglickú verziu európskej normy.  
This standard includes the English version of the European Standard.

Táto norma bola oznámená vo Vestníku ÚNMS SR č. 10/24

Obsahuje: EN 16986:2024

Oznámením tejto normy sa ruší  
STN P CEN/TS 16986 (01 8651) z februára 2017

**139218**

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Úrad pre normalizáciu, metrológiu a skúšobníctvo Slovenskej republiky, 2024  
Slovenská technická norma a technická normalizačná informácia je chránená zákonom č. 60/2018 Z. z. o technickej normalizácii  
v znení neskorších predpisov.

EUROPEAN STANDARD

**EN 16986**

NORME EUROPÉENNE

EUROPÄISCHE NORM

July 2024

ICS 35.240.60

Supersedes CEN/TS 16986:2016

English Version

## Electronic fee collection - Interoperable application profiles for information exchange between service provision and toll charging

Perception de télépéage - Profils d'application d'interopérabilité pour échange d'informations entre la prestation de service et la perception du péage

Elektronische Gebührenerhebung - Interoperable Anwendungsprofile für den Informationsaustausch zwischen den Dienste-Versorgern und Mauterhebern

This European Standard was approved by CEN on 17 June 2024.

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## European foreword

This document (EN 16986:2024) has been prepared by 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of an identical text or by endorsement, at the latest by January 2025, and conflicting national standards shall be withdrawn at the latest by January 2025.

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/TS 16986:2016.

This document features the following main changes compared to CEN/TS 16986:2016:

- updated interoperability application profiles tailored according to electronic fee collection (EFC) charging policies and primary used technologies;
- updated data definitions to reflect changes made to the underlying base standard, i.e., EN ISO 12855:2022;
- addition of a second level of the version identifier (i.e. minor version) of the abstract syntax notation one (ASN.1) module to provide enhanced support to standards that import data types from this document;
- introduction of use of imported ASN.1 types with successors (i.e. including all future minor versions);
- updated terms and definitions, including reference to ISO/TS 17573-2 as the primary source;
- inserted a normative formal specification of profiles’ restrictions on data, both as ASN.1 data types, and as XSD specifications as Annex A and renumbered other annexes consequently;
- updated informative Annex E on the “Use of this document for the European electronic toll service” (EETS), so as to reflect the recast of the EETS legislation (i.e. Directive (EU) 2019/520<sup>[16]</sup> and the corresponding Commission Implementing Regulation<sup>[16]</sup>).

This document is intended to provide support for the technical specification of the recast of the EETS legislation as laid down in the European Directive (EU) 2019/520 and in its Commission Delegated Regulation (EU) 2020/203 and Commission Implementing Regulation (EU) 2020/204. See Annex E on the “Use of this document for the EETS legislation”.

Any feedback and questions on this document should be directed to the users’ national standards body. A complete listing of these bodies can be found on the CEN website.

According to the CEN-CENELEC Internal Regulations, the national standards organisations 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, Türkiye and the United Kingdom.

## EN 16986:2024 (E)

### Introduction

The CEN ISO Standard on *Electronic fee collection - Information exchange between service provision and toll charging* (i.e. EN ISO 12855) is a so-called toolbox standard. That means that it provides a large number of options that can be used to support various needs of toll chargers (TCs) and toll service providers (TSPs). As such, it provides useful but not sufficient support to ensure technical interoperability.

The aim of this document is to produce a profile specification that provides technical interoperability to support the EFC information exchange between TSPs and TCs according to the following tolling policies:

- based on traversing sections of roads;
- based on travelling within areas of territory;
- based on traversing meshed networks of roads.

This document covers the definition of interoperable application profiles (IAP) applicable for the use of EN ISO 12855:2022. These profiles define a specific coherent set of transactions, triggers, conditions, data elements, transfer mechanisms and supporting functions for an interoperable exchange of data between the back end systems of TCs and TSPs (in Europe).

This document defines profiles using the concept of “International Standardized Profiles (ISP)”, as defined in ISO/IEC TR 10000-1. The ISP concept is specifically suited for defining interoperability specifications where a set of base standards can be used in different ways. This is exactly the case for EN ISO 12855:2022, where the base standard allows for different choices that are not interoperable.

The principles of the ISP-concept can be summarized as follows:

- an ISP will make references only to base standards or other ISPs;
- the profile will restrict the choice of base standard options to the extent necessary to maximize the probability of interoperability (e.g. chosen classes, conforming subsets, options and parameter values of base standards);
- the ISP will not copy content of the base standards (in order to avoid consistency problems with the base standards);
- the profile will not specify any requirements that would contradict or cause non-conformance to the base standards;
- the profile may contain conformance requirements that are more specific and limited in scope than those of the base standards;
- conformance to a profile implies by definition conformance to a set of base standards, whereas conformance to that set of base standards does not necessarily imply conformance to the profile.

This document will be complemented by standard EN 17154 that will specify how to evaluate implementations of EN 16986 (this document).

## 1 Scope

This document specifies interoperable application profiles for information exchanges between toll chargers (TCs) and toll service providers (TSPs), by selecting suitable options from the base standard EN ISO 12855:2022.

This document covers:

- exchange of information between back end systems of TCs and TSPs, e.g.:
  - charging related data (toll declarations, billing details, payment claims, payment announcements);
  - administrative data (trust objects, EFC context data, contact details for enforcement, etc.);
  - user related data (exception lists, user details, abnormal OBE information, CCC event data, user complaints);
  - confirmation data.
- transfer mechanisms and supporting functions;
- semantics of data elements;
- formal definitions (Annex A) of restrictions on data types w.r.t. the ASN.1 definitions in the base standard EN ISO 12855:2022 by introducing an XML Schema Definition (XSD) for each specified profile;
- implementation conformance statement proforma (Annex B), as a basis for evaluation of implementation for conformity to this document;
- an interoperability statement proforma (Annex C), as a basis for assessment of transactional interoperability of two technical implementations;
- a web service definition (Annex D) for the use of web services as communication technology.

The implementation of the underlying back end systems and their business processes is not covered. Therefore, the following aspects are outside the scope of this document:

- details about how back end systems use the authenticator data elements of the base standard to implement security;
- how to operate compliance checking and the enforcement process;
- commercial aspects;
- definition of non-functional features such as performance indicators, acceptable fault levels, availability of interfaces of TC and TSP, and reporting requirements.

This document further explains the correspondence between the European electronic toll service (EETS) legislation and this document (Annex E).

**EN 16986:2024 (E)****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.

EN ISO 12855:2022, *Electronic fee collection — Information exchange between service provision and toll charging (ISO 12855:2022)*

EN ISO 17573-3:2023, *Electronic fee collection — System architecture for vehicle related tolling — Part 3: Data dictionary (ISO 17573-3:2023)*

EN ISO 14906:2023, *Electronic fee collection — Application interface definition for dedicated short-range communication (ISO 14906:2022)*

EN ISO 12813:2024, *Electronic fee collection — Compliance check communication for autonomous systems (ISO 12813:2024)*

EN ISO 13141:2024, *Electronic fee collection — Localization augmentation communication for autonomous systems (ISO 13141:2024)*

IETF RC 959, *File Transfer Protocol [Oct 1985]*

IETF RFC 4217, *Securing FTP with TLS [Oct 2015]*

WSDL 1.1, *Web Services Description Language (WSDL) 1.1*<sup>1</sup>

**koniec náhľadu – text ďalej pokračuje v platenej verzii STN**