International Standard

ISO 17574

Electronic fee collection — Requirements for security protection profiles

Perception de télépéage — Exigences relatives aux profils de protection de sécurité

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Contents

Page

Foreword ... **iv**
Introduction ... **v**
1 Scope ... **1**
2 Normative references ... **1**
3 Terms and definitions ... **1**
4 Abbreviated terms ... **2**
5 EFC security architecture and protection profile processes ... **2**
5.1 General ... 2
5.2 EFC security architecture ... 3
5.3 Protection profile preparatory steps ... 3
5.4 Relationship between actors ... 4
6 Outline of protection profile (PP) ... **6**
6.1 Structure ... 6
6.2 Context ... 6
Annex A (informative) **Procedure to prepare the protection profile** ... **8**
Annex B (informative) **Example of threat analysis evaluation method** ... **40**
Annex C (informative) **Relevant security standards in the context of the EFC** ... **46**
Bibliography ... **47**

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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 document 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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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 17574:2017), which has been technically revised.

The main changes are as follows:

— Clause 3 has been updated and ISO 17573-2 has been made the primary source for terms and definitions;

— requirements have been updated to reflect the latest edition of the ISO/IEC 15408 series.

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.

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Introduction

Electronic fee collection (EFC) systems are subject to several ways of fraud both by users and operators but also from people outside the system. These security threats are countered with various types of security measures linked to specified security requirements.

It is recommended that EFC operators prepare their own EFC protection profile (PP) according to this document, as security requirements should be described from the operator's point of view.

A protection profile (PP) refers to a set of safety requirements for a category of products or systems that meet specific needs. A typical example is a PP for on-board equipment (OBE) to be used in an EFC system. However, the requirements in this document are superseded if a PP already exists for the subsystem in question.

The target of evaluation (TOE) for EFC is limited to EFC specific roles and interfaces as shown in Figure 1. Figure 1 shows the relationships and interactions among the entities related to the TOE of the EFC. As shown in this figure, entities are overall management of the toll charging environment, EFC service provider, toll charger and user of the service. Since the existing financial security standards and criteria are applicable to other external roles and interfaces, they are assumed to be outside the scope of TOE for EFC.

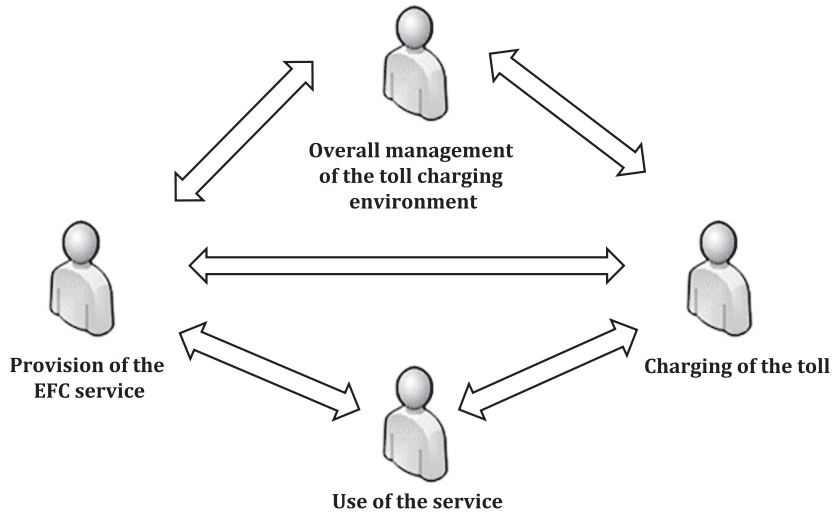


Figure 1 — Scope of TOE for EFC

The security evaluation is performed by assessing the security-related properties of roles, entities and interfaces defined in security targets (STs), as opposed to assessing complete processes which often are distributed over more entities and interfaces than those covered by the TOE of this document.

NOTE Assessing security issues for complete processes is a complementary approach, which can be beneficial to apply when evaluating the security of a system.

It should be noted that the requirements provided in this document are intended to be read in conjunction with the ISO/IEC 15408 series. Annex A provides an example of how to prepare the security requirements for EFC equipment, in this case, a dedicated short-range communication (DSRC)-based OBE with an integrated circuit(s) card (ICC) containing data needed for the EFC. The example refers to a Japanese national EFC system and should only be regarded as an example.

After an PP for EFC is prepared, it can be internationally registered by the organization that prepared the PP for EFC so that other operators or countries that want to develop their EFC system security services can refer to an already registered PP for EFC.

This document on security service framework and PP for EFC is based on the ISO/IEC 15408 series. The ISO/IEC 15408 series includes a set of requirements for the security functions and assurance of IT-relevant products and systems. Operators, organizations or authorities defining their own PP for EFC can use these

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requirements. The different PPs for EFC defined by operators, organizations or authorities will be similar to the different PPs registered by several financial institutions, e.g. for payment instruments like IC cards (ICCs).

The products and systems that were developed in accordance with the ISO/IEC 15408 series can be publicly assured by the authentication of the government or designated private evaluation agencies.

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Electronic fee collection — Requirements for security protection profiles

1 Scope

This document specifies electronic fee collection (EFC) requirements for the preparation and evaluation of security requirements specifications, referred to as protection profiles (PP) in the ISO/IEC 15408 series and in ISO/IEC TR 15446.

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.

ISO/IEC 15408-1:2022, *Information security, cybersecurity and privacy protection — Evaluation criteria for IT security — Part 1: Introduction and general model*

ISO/IEC 15408-2:2022, *Information security, cybersecurity and privacy protection — Evaluation criteria for IT security — Part 2: Security functional components*

ISO/IEC 15408-3:2022, *Information security, cybersecurity and privacy protection — Evaluation criteria for IT security — Part 3: Security assurance components*

ISO/IEC 15408-4:2022, *Information security, cybersecurity and privacy protection — Evaluation criteria for IT security — Part 4: Framework for the specification of evaluation methods and activities*

ISO/IEC 15408-5:2022, *Information security, cybersecurity and privacy protection — Evaluation criteria for IT security — Part 5: Pre-defined packages of security requirements*

ISO 17573-2, *Electronic fee collection — System architecture for vehicle related tolling — Part 2: Vocabulary*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 17573-2 apply.

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

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at https://www.electropedia.org/

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