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Electronic fee collection — Personalization of on-board equipment (OBE) —

Part 1: Framework

Perception de télépéage — Personnalisation des équipements embarqués —

Partie 1: Cadre

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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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Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation on 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 the following URL: www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 204, *Intelligent transport systems*.

A list of all parts in the ISO 21719 series can be found on the ISO website.

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Introduction

On-board equipment (OBE) is an in-vehicle device that is able to contain one or more application instances in order to support different intelligent transportation system (ITS) implementations such as electronic fee collection (EFC). Examples of EFC applications are road toll collection/road charging, localization augmentation (LAC) or compliance checking (CCC).

To assign the EFC application in the OBE to a certain user and/or vehicle, personalization should be performed. This means that unique user and vehicle related data, needs to be transferred to the OBE.

The CEN/TR 16152 already assessed many aspects of the personalization process and it also defined the overall personalization assets, i.e. application data, application keys and vehicle data.

Different communication media may be used for transferring the personalization assets to the OBE; but for all media, common procedures may be applied such as an overall message exchange framework and necessary security functionality in order to ensure data protection and integrity.

By standardizing the personalization procedure, compatibility of personalization equipment is supported, and the entity responsible for the personalization, e.g. a toll service provider, will be able to outsource parts of, or a complete, personalization to a third party, another service provider or a personalization agent.

This document defines common functionality for personalization that is independent of the communication media and personalization equipment (PE) used, while the subsequent parts define in detail how the functions are realized on different defined communication media and interfaces.

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Electronic fee collection — Personalization of on-board equipment (OBE) —

Part 1: Framework

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1 Scope

This document describes:

— an overall description of the EFC personalization process;

— a description of EFC functionality that can be used for personalization.

The personalization process takes place within the domain of the entity that is responsible for the application in the OBE.

The scope of the EFC functionality is limited to the interface between the personalization equipment (PE) and OBE as shown in Figure 1. It is out of the scope of this document to define whether the personalization functionality resides completely in the PE or whether this functionality instead resides in a central system and where the PE is more or less "transparent".

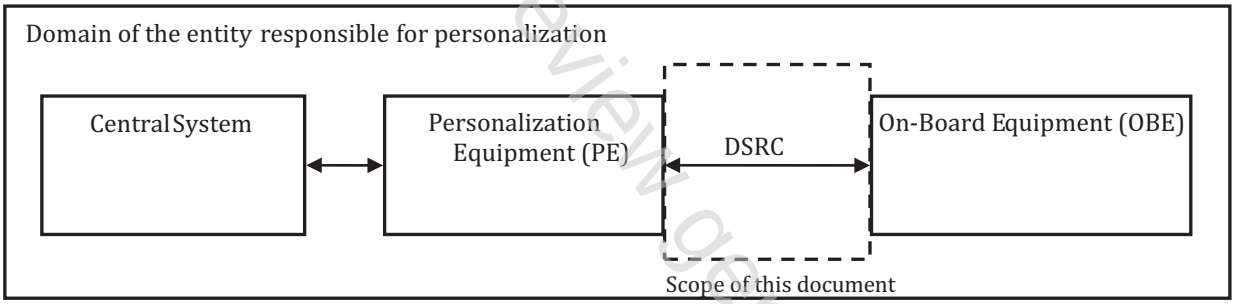

Figure 1 — Scope of this document (box delimited by the dotted line)

It is outside the scope of this document to define the following:

— exact application command or message structures for the EFC personalization functionality (these are dependent on the communication media and described in subsequent parts of the ISO/TS 21719 series);

— conformance procedures and test specification (this may be provided in a by separate set of standards that are referred to in the subsequent parts of the ISO/TS 21719 series);

— setting-up of operating organizations (e.g. Toll Service Provider, personalization agent, trusted third party, etc.);

— legal issues.

NOTE Some of the above issues are subject to separate standards prepared by CEN/TC 278, ISO/TC 204 or ETSI ERM.

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2 Normative references

There are no normative references in this document.

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 www.electropedia.org

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

3.1
attribute
addressable package of data consisting of a single data *element* (3.3) or structured sequences of data elements

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

3.2
electronic fee collection
EFC
fee collection by electronic means

[SOURCE: ISO 12855:2015, 3.6]

3.3
element
DSRC directory containing application information in the form of *attributes* (3.1)

3.4
OBE personalization
process of transferring *personalization assets* (3.6) to the *on-board equipment* (*OBE*) (3.5)

3.5
on-board equipment
OBE
required equipment on-board a vehicle for performing required *electronic fee collection* (*EFC*) (3.2) functions and communication services

[SOURCE: ISO 12855:2015, 3.9]

3.6
personalization assets
specific data stored in the OBE related to the user and the vehicle

3.7
personalization equipment
equipment for transferring *personalization assets* (3.6) to the *OBE* (3.5)

3.8
toll domain
area or part of a road network where a certain toll regime is applied

[SOURCE: ISO 17573:2010, 3.18, modified — “certain” has been added.]

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