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Electronic fee collection — Investigation of EFC standards for common payment schemes for multi-modal transport services

Perception du télépéage — Recherche sur les normes de perception du télépéage pour des schémas de paiement communs pour les services multimodaux de transport



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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*.

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Introduction

On-board account payment means are used, e.g., in public transport systems and in some electronic fee collection (EFC) systems. It is expected that the deployment of on-board account payment scheme will grow, as it has little dependence on the communication network and as it potentially can provide users with a common payment means for a range of multi-modal transport services.

This Technical Report (TR) provides an analysis of the specific requirements of common payment schemes within the framework of EFC systems as outlined in the existing EFC standards. The Technical Report does this by providing more specific information about the Payment means (such as IC cards) and the interfaces between Payment means and the other parts of an EFC system (see e.g. the previous edition of the ISO/TS 17573:2003). Payment means and Payment means Issuer are described in ISO 17573:2010, the latest version of the EFC architecture role model, hence allowing for the usage of the Payment means of the EFC On-board account for payment for other services. This Technical Report provides for an additional information (e.g. requirements, descriptions) relevant to the role of Payment means Issuer and information flows.

The motivation for this Technical Report is as follows:

— On-board account based EFC systems using payment means are widely adopted in many countries in Asia. In several of these countries, payment means are already used or planned to be used for both for the EFC and for the public transport services.

— Central account based EFC systems are widely adopted in many European countries and in the USA. Payment means used in such EFC systems can also be used in the common payment scheme (i.e. for the payment for other services).

Though there is a description of interaction between Toll charging environment and Financial system in the ISO 17573:2010, to provide for the On-board account EFC system used in the common payment schemes, additional information, relevant to the interactions between the Financial system and the Toll charging environment (i.e. interface between the Toll charging environment and objects outside of this environment), is required.

The following are the envisaged benefits of the common usage of payment means in ITS and EFC services:

— greater convenience of transport usage both for EFC and for public transport;

— enhanced multi-modal transport, more cost-effective, efficient and environmentally friendly.

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Electronic fee collection — Investigation of EFC standards for common payment schemes for multi-modal transport services

1 Scope

Common payment scheme for multi-modal transport services, such as toll roads and public transport, are implemented all over the world. These systems are often based on a common payment medium, e.g. IC cards, for use in more than one transport service. The aim of this Technical Report is to analyse the existing set of EFC standards for their suitability for using common payment media for multi-modal transport services, where applicable identify standardisation gaps and to make proposals for such EFC standardisation projects. This includes definition of additional information to be exchanged among the related entities and to define the specific requirements for common payment scheme.

The scope of this Technical Report includes:

— investigation of a suitable model for EFC systems and other transport services;

— identification of the required interface definitions between the EFC and the public transport services including e-money services;

— identification of additional needs for additional EFC related information exchange among the related entities;

— provision of guiding information to be considered in revisions of EFC standards.

The scope includes all types of EFC systems, i.e. including both DSRC based EFC and autonomous EFC systems, and both pre-pay type and post-pay type.

Service related information of both public transport and e-money are outside the scope of this Technical Report.

2 Normative references

None.

3 Terms and definitions

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

3.1
central account
payment means, e.g. electronic values or number of passages in an EFC system, stored in a central system operated by the Toll Service Provider

3.2
clearing house
organisation re-allocating value generated in the payment system between the various actors, enabling these actors to execute settlement

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