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Electronic Fee Collection — Interoperable application profiles for information exchange between Service Provision and Toll Charging

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National foreword

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Electronic Fee Collection - Interoperable application profiles for information exchange between Service Provision and Toll Charging

Perception de télépéage - Profil d'application 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

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Introduction

The Standard on information exchange between service provision and toll charging (i.e. EN ISO 12855:2015) 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 and toll service providers. As such, it provides useful but not sufficient support to ensure technical interoperability.

The aim of this Technical Specification is to produce a profile specification that provides technical interoperability to support the EFC information exchange between toll service providers (TSPs) and toll chargers (TCs):

— based on DSRC;

— based on GNSS/CN – autonomous systems.

This Technical Specification covers the definition of interoperable application profiles (IAP) applicable for the use of EN ISO 12855:2015. 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 central equipment of TCs and TSPs (in Europe).

This IAP defines profiles using the concept of "International Standardised 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 12855:2015, 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 Technical Specification is consistent with and is intended to provide support for the technical specification of the EETS laid down in the European Directive 2004/52/EC and in the subsequent European Commission Decision 2009/750/EC.

A suite of test specifications is currently being developed to support assessment of an implementation for compliance with this Technical Specification.

1 Scope

This Technical Specification defines an application interface definition by selecting suitable options from the base standard EN ISO 12855:2015. Furthermore, it defines transfer mechanisms and supporting functions to ensure the interoperability between TCs and TSPs.

This Technical Specification covers:

— exchange of information between the central equipment associated with the two roles service provision and toll charging, e.g.:

  — charging related data (exception lists, toll declarations, billing details, payment claims);

  — administrative data (trust objects, EFC context data, contact details for enforcement, etc.);

  — confirmation data.

— transfer mechanisms and supporting functions;

— semantics of data elements;

— implementation conformance statement proforma (Annex A), as a basis for assessment of conformity to this Technical Specification;

— an Interoperability statement proforma (Annex B), as a basis for assessment of transactional intereoperability of two technical implementations;

— a web service definition (Annex C) for the use of web services as communication technology.

The implementation of the underlying back office systems and their business processes is not covered. Therefore, outside of the scope is in particular:

— details on how to achieve security using the authenticator data elements of the base standards;

— how to operate compliance checking and the enforcement process;

— commercial aspects;

— definition of non-functional features such as performance indicators like accuracy, availability and reporting requirements.

This Technical Specification further provides an assessment of support of the EETS (Annex D) and an explanation how to read the unified modelling language (UML) diagrams (Annex E) that are used in this document.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

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

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* [1)]

1) http://www.w3.org/TR/2001/NOTE-wsdl-20010315 [15.03.2001]