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Electronic fee collection - EETS gap analysis and proposed standards roadmap

Perception de télépéage - Analyse des lacunes du SET et feuille de route des normes proposées

Elektronische Gebührenerhebung - EETS Lückenanalyse und vorgeschlagener Handlungsplan für die Normierung

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CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

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European foreword

This document (CEN/TR 17546:2020) has been prepared by Technical Committee CEN/TC 278 “Intelligent Transport Systems”, the secretariat of which is held by NEN.

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This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association.

Introduction

Historical background

From 2004 to 2019, two main European legislative acts were ruling the regulated interoperable tolling service in Europe, the so-called European Electronic Tolling Service (EETS):

1. the Directive 2004/52/EC of the European Parliament and European Council of the 29th of April, 2004, concerning the interoperability of tolling systems within the Community [28];

2. the Decision of the European Commission of the 6th of October 2009 regarding the definition of the European tolling service and its technical aspects (2009/750/EC) [29].

The main objective of the above acts was to set up the conditions to ensure compatibility and interoperability of the different electronic tolling systems in the European Union (EU). The acts apply to road tolling, as well as tunnels, bridges and ferries.

Key aspects of the legislation were:

1. creation of a European Electronic Tolling Service (EETS);

2. obligation for all new tolling systems (installed after the 1st of January 2007) to support the technologies listed in the legislation, i.e. 5,8 GHz dedicated short-range communication (DSRC), global navigation satellite system (GNSS, including GPS and GALILEO) and Global System for Mobile communications-General Packet Radio Service (GSM-GPRS); systems may be DSRC-based or GNSS-based (autonomous tolling systems) schemes;

3. obligation for all toll service providers to provide their users with the possibility to obtain on-board devices that support **all** technologies above;

4. possibility for users to have a single contract with a service provider that gives access to all electronic tolling systems in Europe;

5. obligation for all toll chargers to give not-discriminatory access to their tolling domains for all European toll service providers.

Tuning the EETS service definition: the new legislation

After the introduction of the European legislation, the development of the EETS went on slower than expected, due to commercial, procedural and legislative aspects that were not initially considered.

Some pilots and European projects (among all the REETS – Regional EETS [44]) had shown that a number of standards ought to added to and become part of the European EETS legislation, in order to achieve a more solid interoperable framework.

While, with lengthy procedures, a core of EETS was beginning to take shape, with Service Providers being accredited in a number of Toll Domains and registered in their respective member state of the EU, the European Commission decided that it was time to revise (recast in EU legal parlance) the Directive. The revision process, a rather lengthy process, eventually led to a recast Directive (EU) 2019/520 of the 19th of March 2019[30]. The new Directive gives more flexibility in the on-board equipment (OBE) (possibility for light weight vehicles to mount a DSRC-only device, possibility of a "scattered" device that possibly uses already existing components in the vehicle, …), more flexibility for accreditation and registration as European Toll Service Provider, provides for cross-border enforcement, and empowers the EU Commission with the ability of adopting Delegated and Implementing Acts to refine the technical contents of the "new" EETS.

New main characteristics of the new EETS legislation are:

- addition of cross-border enforcement;
- separation of Light Weight Vehicles and Heavy Weight Vehicles;
- clarification of responsibilities of the EETS providers;
- clarification of responsibilities of the Toll Chargers;
- removal of market entry barriers in order to promote competition;
- addition of automatic number plate recognition (ANPR) technologies.

The Commission adopted two Acts, one named Commission Implementing Regulation [31], the second one named Commission Delegated Regulation [32], that were adopted at the end of 2019, to further define the technical and procedural characteristics of the EETS. These Acts, among others, name and prescribe a number of CEN standards to be used for the EETS.

This document examines the requirements expressed in the new European legislation for EETS (including mandated CEN/ISO standards) and maps these requirements to the current CEN EFC standards, with the aim to identify gaps in the standardized offer (standards to be developed/enhanced) and also perceived inconsistencies and weaknesses in the current version of the European legislation. A roadmap is then proposed to fill the discovered gaps, whilst noting that it is not CEN's role to develop a turnkey solution for the EETS.

1 Scope

This document provides an EETS gap analysis with the aim to identify the need for new or updated standards to provide an enhanced support of the recast of the EU EETS legislation [29], [31], [32].

2 Normative references

There are no normative references in this document.

3 Terms and definitions

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

- IEC Electropedia: available at http://www.electropedia.org/
- ISO Online browsing platform: available at http://www.iso.org/obp

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

3.1
back end
part of a back-office system interfacing to one or more *front ends* (3.9)

[SOURCE: ISO/TS 17573-2:2020, 3.22]

3.2
certification
act of providing an official document, as proof that something has happened or been done

3.3
toll service provider
legal entity providing toll services on one or more *EETS domains* (3.8)

[SOURCE: ISO/TS 17573-2:2020, 3.206]

3.4
toll charger
entity which levies toll for the use of vehicles in a toll domain

[SOURCE: ISO/TS 17573-2:2020, 3.194]

3.5
European Electronic Toll Service
EETS
toll service provided under a contract on one or more *EETS domains* (3.8) by an *EETS provider* (3.6) to an *EETS user* (3.7)

3.6
EETS provider
entity which, under a separate contract, grants access to the *EETS* (3.5) to an *EETS user* (3.7), transfers the tolls to the relevant toll charger, and which is registered by its Member State of establishment