ILNAS

Institut luxembourgeois de la normalisation
de l'accréditation, de la sécurité et qualité
des produits et services

ILNAS-EN 15509:2014

Electronic fee collection - Interoperability application profile for DSRC

Perception de télépéage - Profil d'application d'interopérabilité pour DSRC

Elektronische Gebührenerhebung - Anwendungsprofil für DSRC Interoperabilität

09/2014

National Foreword

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EUROPEAN STANDARD
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EUROPÄISCHE NORM

EN 15509

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English Version

Electronic fee collection - Interoperability application profile for DSRC

Perception de télépéage - Profil d'application d'interopérabilité pour DSRC

Elektronische Gebührenerhebung - Anwendungsprofil für DSRC Interoperabilität

This European Standard was approved by CEN on 18 July 2014.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

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Foreword

This document (EN 15509:2014) has been prepared by Technical Committee CEN/TC 278 “Intelligent transport systems”, the secretariat of which is held by NEN.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by March 2015 and conflicting national standards shall be withdrawn at the latest by March 2015.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

This document supersedes EN 15509:2007.

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

This second edition of EN 15509 incorporates the following main modifications compared to the previous one:

— amendment of terms, in order to reflect harmonization of terms across electronic fee collection (EFC) standards;

— addition of a new clause (i.e. Clause 5) on conformance;

— amendment of the definition of vehicle licence plate number (size constraints and clarification that only Latin alphabet coding is supported)

— revision of the informative annex on security considerations (i.e. Annex F), and reference to CEN/TS 16439 on Electronic fee collection – Security framework;

— addition of a new informative annex (i.e. Annex I) on how to use this standard for the European electronic toll service;

— deletion of informative Annex H, part of the first edition, on Vehicle classification data, as it was deemed obsolete in view of EN ISO 14906:2011;

— deletion of informative Annex I, part of the first edition, on Using this European Standard for other DSRC-based transactions, as it was deemed obsolete in view of CEN ISO/TS 12813 and CEN ISO/TS 13141;

— amendments to reflect changes to the underlying base standards, with emphasis on backward compatibility with the first edition of this standard.

For the revision of this European Standard, the following principles have been used:

— take into account the evolution of some of the underlying standards and technical specifications, i.e. EN ISO 14906:2011, CEN/TS 16439, ISO/IEC 9797-1;

— maintain compatibility with the previous edition of this European Standard.

This European Standard defines an Application Profile based on a set of base standards according to the concept of "International Standardised Profiles (ISP)" as defined in ISO/IEC/TR 10000-1. The objective is to support technical interoperability between EFC DSRC-based systems in Europe. The principles of Application Profiling and relations to underlying base standards are defined in the Introduction.

According to the CEN-CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

Introduction

CEN/TC 278 has produced a set of standards that supports interoperable electronic fee collection (EFC) dedicated short-range communication (DSRC)-based systems (e.g. EN ISO 14906, a “toolbox” for defining EFC-application transactions). However, these standards are necessary but not sufficient to ensure technical interoperability between DSRC-EFC-systems. This European Standard provides for a coherent set of requirements of the EFC-application and that is intended to serve as a common technical platform for EFC-interoperability.

This European Standard defines an Interoperable Application Profile for DSRC-EFC transactions. The main objective is to support technical interoperability between EFC-systems within the scope of this European Standard (as defined in Clause 1 below). A basic description of the EFC-service and an EFC System can be found in ISO 17573.

This European Standard only defines a basic level of technical interoperability for EFC equipment, i.e. on-board unit (OBU) and roadside equipment (RSE) using DSRC. It does not provide a full solution for interoperability, and it does not define other parts of the EFC-system, other services, other technologies and non-technical elements of interoperability.

The elaboration of this European Standard is based on the experiences from a vast number of implementations and projects throughout Europe. The standard makes use of the results from European projects such as CARDME, PISTA and CESARE, as they represent the fruit of European EFC harmonization and have been used as the basis for several national implementations.

The development of a common European Electronic Toll Service (EETS) as a part of the European Directive (2004/52/EC) also calls for the definition of an interoperable EFC-service. This European Standard provides for effective support for the work on the definition of EETS. After publication of EN 15509:2007 an EC-decision (2009/750/EC) on the EETS was adopted, that notes the first edition of this standard (EN 15509:2007) as a mandatory technical reference for the EETS. This has been fully maintained in this second edition of EN 15509.

Although there already are numerous existing base standards and specifications, there are specific needs that motivate this Interoperable Application Profile standard:

— Definition of the necessary and sufficient EFC-DSRC requirements to support technical interoperability;

— Provision of a crucial part of the EETS and hence support for the European Directive (2004/52/EC), the European Commission Decision (2009/750/EC of October 2009) on the definition of the European Electronic Toll Service and its technical elements complemented by the Guide for the application of the directive on the interoperability of electronic road toll systems;

— CARDME/PISTA/CESARE dialects are used in many countries but they need to converge, as the present situation is not cost effective;

— Needed additional DSRC-requirements are made;

— Choice of data elements including vehicle data;

— Extended definition of the use of some data elements, including semantics and coding;

— Clear choices for security implementation;

— It facilitates a complementing test specification (with clear relations between the conformance requirements and evaluation tests);

— Good support for procurements.