
**Electronic fee collection — Pre-study
on the use of vehicle licence plate
information and automatic number
plate recognition (ANPR) technologies**

*Perception de télépéage — Pré-étude sur l'utilisation des
informations de la plaque d'immatriculation du véhicule et la
technologie de la lecture automatique des plaques minéralogiques
(LAPI)*



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ISO copyright office
CP 401 • Ch. de Blandonnet 8
CH-1214 Vernier, Geneva
Phone: +41 22 749 01 11
Email: copyright@iso.org
Website: www.iso.org

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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 of 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 www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 204, *Intelligent transport systems*, in collaboration with the European Committee for Standardization (CEN) Technical Committee CEN/TC 278, *Intelligent transport systems*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Introduction

This document endeavours to foster a common understanding in the context of electronic fee collection (EFC) systems of the use of vehicle licence plate information, and of automatic number plate recognition (ANPR) technologies.

This document notably seeks to advance the common understanding and definitions in the following areas:

- information associated with the licence plate number (LPN);
- information exchanges over open interfaces;
- outline of specification of exchanges between actors, notably the toll service provider (TSP), the toll charger (TC), vehicle registration authorities, etc;
- technologies regarding the ANPR.

The outcome is intended to contribute to more effective and efficient EFC schemes using vehicle LPN, obtained by means of ANPR technology and any associated information (including make and model) as a primary means to identify the user via the LPN, or a complementary means to augment the reliability and the robustness of their dedicated short-range communication (DSRC)-based or global navigation satellite system/cellular network (GNSS/CN)-based systems (including degraded mode, trip reconstitution, etc).

Electronic fee collection — Pre-study on the use of vehicle licence plate information and automatic number plate recognition (ANPR) technologies

1 Scope

This document provides an analysis of the use of licence plate number (LPN) information and automatic number plate recognition (ANPR) technologies in electronic fee collection (EFC), through the description of the legal, technical and functional contexts of LPN-based EFC. It also provides an associated gap analysis of the EFC standards to identify actions to support standardized use of the identified technologies, and a roadmap to address the identified gaps.

The gap analysis in this document is based on use cases, relevant regulations, standards and best practices in the field of EFC, based on the European electronic toll service (EETS)^[27] model.

Examples of licence plate number (LPN)-based tolling schemes are given in [Annex A](#).

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 terminology databases for use in standardization at the following addresses:

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

3.1

3 dimensional

3D

computer graphics that define an object by its width, length and depth

[SOURCE: ISO/TS 23541-1:2021, 3.1.1, modified — Note 1 to entry removed.]

3.2

automatic number plate recognition

technology to automatically read vehicle registration plates

Note 1 to entry: A vehicle registration plate typically contains the indicator or the code of the country that issued the vehicle registration plate.

Note 2 to entry: Optical character recognition techniques are typically part of the technology associated with automatic number plate recognition.

Note 3 to entry: Automatic licence plate recognition (ALPR) is a synonym to ANPR.

[SOURCE: ISO/TS 17573-2:2020, 3.18, modified — Note 3 to entry has been added.]