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SLOVENSKI STANDARD
SIST EN ISO 13141:2024

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Nadomešča:
SIST EN ISO 13141:2016
SIST EN ISO 13141:2016/A1:2017

Elektronsko pobiranje pristojbin - Lokalizacija povečane gostote komunikacije za avtonomne sisteme (ISO 13141:2024)

Electronic fee collection - Localization augmentation communication for autonomous systems (ISO 13141:2024)

Elektronische Gebührenerhebung - Kommunikation zur genauen Ortsbestimmung für autonome Systeme (ISO 13141:2024)

Perception de télépéage - Communications d'augmentation de localisations pour systèmes autonomes (ISO 13141:2024)

Ta slovenski standard je istoveten z: **EN ISO 13141:2024**

ICS:

03.220.20	Cestni transport	Road transport
35.240.60	Uporabniške rešitve IT v prometu	IT applications in transport

SIST EN ISO 13141:2024   **en,fr,de**

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EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN ISO 13141

March 2024

ICS 35.240.60; 03.220.20

Supersedes EN ISO 13141:2015

English Version

Electronic fee collection - Localization augmentation communication for autonomous systems (ISO 13141:2024)

Perception de télépéage - Communications
d'augmentation de localisations pour systèmes
autonomes (ISO 13141:2024)

Elektronische Gebührenerhebung - Kommunikation
zur genauen Ortsbestimmung für autonome Systeme
(ISO 13141:2024)

This European Standard was approved by CEN on 8 October 2023.

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

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

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European foreword

This document (EN ISO 13141:2024) has been prepared by Technical Committee ISO/TC 204 "Intelligent transport systems" in collaboration with 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of an identical text or by endorsement, at the latest by September 2024, and conflicting national standards shall be withdrawn at the latest by September 2024.

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

This document supersedes EN ISO 13141:2015.

Any feedback and questions on this document should be directed to the users' national standards body/national committee. A complete listing of these bodies can be found on the CEN website.

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Endorsement notice

The text of ISO 13141:2024 has been approved by CEN as EN ISO 13141:2024 without any modification.

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International Standard

ISO 13141

Electronic fee collection — Localization augmentation communication for autonomous systems

Perception de télépéage — Communications d'augmentation de localisations pour systèmes autonomes

**Second edition
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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 document 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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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).

This second edition cancels and replaces the first edition (ISO 13141:2015), which has been technically revised. It also incorporates the Amendment ISO 13141:2015/Amd. 1:2017.

The main changes are as follows:

— Clause 6 has been added, concerning conformance requirements;

— Clause 3 has been updated and ISO/TS 17573-2 has been made the primary source for terms and definitions;

— data definitions in Clause 8 have been updated, including making reference to ISO 17573-3 as the primary source;

— imported ASN.1 types with successors (i.e. including all future minor versions) have been used;

— Annex G has been revised to align with the evolution of the European Electronic Toll Service (EETS);[19],[20],[21]

— various editorial changes have been made to improve readability.

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.

ISO 13141:2024(en)

Introduction

On-board equipment (OBE) that uses satellite-based positioning technology to collect data required for charging for the use of roads operates in an "autonomous" way (i.e. generally without relying on dedicated roadside infrastructure). However, these autonomous systems can, in some places, need some roadside infrastructure support for proper identification of charge objects. Such assistance can be required at places where satellite-based localization accuracy or availability is insufficient or at places where the OBE is directly informed about the identity of the relevant charge object.

In an interoperable environment, it is essential that this localization information be available in a standardized way. This document specifies requirements for localization augmentation by dedicated short-range communication (DSRC) between roadside equipment (RSE) and OBE. This document makes no assumptions about the operator of the RSE in terms of its role according to ISO 17573-1, i.e. whether the RSE is operated by an entity in the service provision role or in the toll charging role.

This document has been prepared considering the following points.

— The localization augmentation communication (LAC) serves to transmit localization information to passing OBE without identifying individual OBE.

— The localization information contains both geographical location independent of charging context, and context-dependent identification of charge objects.

— A single roadside installation is able to provide localization augmentation for several overlapping electronic fee collection (EFC) contexts.

— This document is based on the EFC architecture specified in ISO 17573-1.

— The communication applies to all OBE architectures.

— This document is applicable to various DSRC media, especially the CEN DSRC stack.

— The communication supports security services for data origin authentication, integrity and non-repudiation.

This document specifies an attribute, LacData, which is communicated from the RSE to the OBE by means of an acknowledged writing service, which is implemented through the SET service of DSRC Layer 7 (ISO 15628 and EN 12834). The LAC application is specified as a self-contained DSRC application with its own application identifier (AID). Regarding the DSRC communications stack, this document provides specific definitions regarding the CEN DSRC stack as specified in EN 15509. [Annexes C](#), [D](#), [E](#) and [H](#) provide for use of the Italian DSRC as specified in ETSI/ES 200 674-1.[9] ISO CALM IR,[3] ARIB DSRC[10] and WAVE DSRC.[11]

All data relevant for the LAC application have been put into the attribute LacData, to create a single standard communications content which is transmitted by LAC RSE and always signed as a whole. LacData can transport both the geographic coordinates (latitude, longitude and altitude) and the identification of a specific charge object. All elements of LacData are mandatory, but Null values are specified to allow LAC installations to transmit only a selection of all specified data elements.

Access credentials are mandatory for writing LacData to protect OBE from non-authentic RSE. LacData are critical for charge determination and for providing evidence. For these purposes, the authenticators which are specified can be used to provide for data origin authentication, data integrity and non-repudiation for LacData. There are two separate authenticator fields specified to allow for separate authentication and non-repudiation, if required by the institutional arrangements of a toll system.

This document is "minimalist" in the sense that it covers what is required for operational systems and planned systems.

A test suite for checking an OBE or RSE implementation for conformance with ISO 13141:2015 is specified in ISO 13140-1:2016. This test suite will be updated to reflect the changes incorporated into this second edition of ISO 13141.