SLOVENSKI STANDARD
SIST EN ISO 15118-8:2019

01-april-2019

Cestna vozila - Komunikacijski vmesnik med vozilom in omrežjem - 8. del: Zahteve za fizične in podatkovne povezovalne plasti za brezžično komunikacijo (ISO 15118-8:2018)

Road vehicles - Vehicle to grid communication interface - Part 8: Physical layer and data link layer requirements for wireless communication (ISO 15118-8:2018)

Véhicules routiers - Interface de communication entre véhicule et réseau électrique - Partie 8: Exigences relatives à la couche physique et à la couche liaison de données pour la communication sans fil (ISO 15118-8:2018)

Ta slovenski standard je istoveten z: **EN ISO 15118-8:2019**

ICS:

35.100.05	Večslojne uporabniške rešitve	Multilayer applications
43.040.15	Avtomobilska informatika. Vgrajeni računalniški sistemi	Car informatics. On board computer systems

SIST EN ISO 15118-8:2019 **en,fr,de**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN ISO 15118-8

February 2019

ICS 43.120

English Version

Road vehicles - Vehicle to grid communication interface - Part 8: Physical layer and data link layer requirements for wireless communication (ISO 15118-8:2018)

Véhicules routiers - Interface de communication entre véhicule et réseau électrique - Partie 8: Exigences relatives à la couche physique et à la couche de liaison entre les données pour la communication sans fil (ISO 15118-8:2018)

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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

The text of ISO 15118-8:2018 has been prepared by Technical Committee ISO/TC 22 "Road vehicles" of the International Organization for Standardization (ISO) and has been taken over as EN ISO 15118-8:2019 by Technical Committee CEN/TC 301 "Road vehicles" the secretariat of which is held by AFNOR.

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of an identical text or by endorsement, at the latest by August 2019, and conflicting national standards shall be withdrawn at the latest by August 2019.

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.

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Endorsement notice

The text of ISO 15118-8:2018 has been approved by CEN as EN ISO 15118-8:2019 without any modification.

INTERNATIONAL STANDARD

ISO 15118-8

First edition
2018-03

Road vehicles — Vehicle to grid communication interface —

Part 8: Physical layer and data link layer requirements for wireless communication

Véhicules routiers — Interface de communication entre véhicule et réseau électrique —

Partie 8: Exigences relatives à la couche physique et à la couche liaison de données pour la communication sans fil

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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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Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation on 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 the following URL: www.iso.org/iso/foreword.html.

This document was prepared jointly by Technical Committee ISO/TC 22, *Road vehicles*, Subcommittee SC 31, *Data communication*, and Technical Committee IEC/TC 69, *Electric road vehicles and electric industrial trucks*. The draft was circulated for voting to the national bodies of both ISO and IEC.

A list of all parts in the ISO 15118 series can be found on the ISO website.

Introduction

The pending energy crisis and necessity to reduce greenhouse gas emissions has led the vehicle manufacturers to a very significant effort to reduce the energy consumption of their vehicles. They are presently developing vehicles partly or completely propelled by electric energy. Those vehicles will reduce the dependency on oil, improve the global energy efficiency and reduce the total CO_2 emissions for road transportation if the electricity is produced from renewable sources. To charge the batteries of such vehicles, specific charging infrastructure is required.

Much of the standardization work on dimensional and electrical specifications of the charging infrastructure and the vehicle interface is already treated in the relevant ISO or IEC groups. However, the question of information transfer between the EV and the EVSE has not been treated sufficiently.

Such communication is necessary for the optimization of energy resources and energy production systems so that vehicles can recharge in the most economic or most energy efficient way. It is also required to develop efficient and convenient billing systems in order to cover the resulting micro-payments. The necessary communication channel may serve in the future to contribute to the stabilization of the electrical grid, as well as to support additional information services required to operate electric vehicles efficiently and economically.

In ISO 15118-3, the messages exchanged between the vehicle and the infrastructure are transported by the cable used for power transfer. With the inception of wireless power transfer technologies and the tremendous development of wireless communication in our societies, the need for a wireless communication between vehicle and charging infrastructure becomes imperative. This is the main focus of this document. The relevant information on use-case definitions and network and application protocol requirements can be found in ISO 15118-1[1)] and ISO 15118-2[2)], respectively.

1) Under development. Stage at time of publication: ISO/DIS 15118-1:2018.

2) Under development. Stage at time of publication: ISO/CD 15118-2:2018.

Road vehicles — Vehicle to grid communication interface —

Part 8: Physical layer and data link layer requirements for wireless communication

1 Scope

This document specifies the requirements of the physical and data link layer of a wireless High Level Communication (HLC) between Electric Vehicles (EV) and the Electric Vehicle Supply Equipment (EVSE). The wireless communication technology is used as an alternative to the wired communication technology as defined in ISO 15118-3.

It covers the overall information exchange between all actors involved in the electrical energy exchange. ISO 15118 (all parts) are applicable for conductive charging as well as Wireless Power Transfer (WPT).

For conductive charging, only EVSEs compliant with "IEC 61851-1 modes 3 and 4" and supporting HLC are covered by this document. For WPT, charging sites according to IEC 61980 (all parts) and vehicles according to ISO/PAS 19363 are covered by this document.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 15118-1, *Road vehicles — Vehicle to grid communication interface — Part 1: General information and use-case definition*

ISO 15118-2:2014, *Road vehicles — Vehicle-to-Grid Communication Interface — Part 2: Network and application protocol requirements*

ISO 15118-3:2015, *Road vehicles — Vehicle to grid communication interface — Part 3: Physical and data link layer requirements*

ISO/PAS 19363, *Electrically propelled road vehicles — Magnetic field wireless power transfer — Safety and interoperability requirements*

IEEE Std 802.11™-2012, IEEE *Standard for Information technology — Telecommunications and information exchange between systems — Local and metropolitan area networks — specific requirements: Part 11: Wireless LAN Medium Access Control (MAC) and Physical Layer (PHY) Specifications*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 15118-1, ISO 15118-2 and the following apply.

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

