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

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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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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.

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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.

ISO 15118-8:2018
https://standards.iteh.ai/catalog/standards/iso/733740e1-b66e-48ac-8c2c-0ec7036b3a56/iso-15118-8-2018