

# INTERNATIONAL STANDARD

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## Road vehicles — Vehicle to grid communication interface —

### Part 1: General information and use-case definition

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

*Partie 1: Informations générales et définition de cas d'utilisation*

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Case postale 56 • CH-1211 Geneva 20  
Tel. + 41 22 749 01 11  
Fax + 41 22 749 09 47  
E-mail [copyright@iso.org](mailto:copyright@iso.org)  
Web [www.iso.org](http://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. [www.iso.org/directives](http://www.iso.org/directives)

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received. [www.iso.org/patents](http://www.iso.org/patents)

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

The committee responsible for this document is ISO/TC 22, *Road vehicles*, Subcommittee SC 3, *Electrical and electronic equipment*.

ISO 15118-1 was developed in cooperation with IEC TC 69, *Electric road vehicles and electric industrial trucks*.

ISO 15118 consists of the following parts, under the general title *Road vehicles — Vehicle to grid communication interface*:

- *Part 1: General information and use-case definition*
- *Part 2: Network and application protocol requirements*
- *Part 3: Physical and data link layer requirements*

The following parts are under preparation:

- *Part 4: Network and application protocol conformance test*
- *Part 5: Physical layer and data link layer conformance test*

This corrected version of ISO 15118-1:2013 incorporates the following correction:

- The ISO/IEC double logo was added to the cover page.

## Introduction

The pending energy crisis and the necessity to reduce greenhouse gas emissions have led vehicle manufacturers to make 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 global energy efficiency and reduce the total CO<sub>2</sub> 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 vehicle, the local installation and the grid has not been treated sufficiently.

Such communication is beneficial for the optimization of energy resources and energy production systems as vehicles can recharge at the most economic or most energy-efficient instants. It is also required to develop efficient and convenient payment 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.

Withdrawal

# Road vehicles — Vehicle to grid communication interface —

## Part 1: General information and use-case definition

### 1 Scope

ISO 15118 specifies the communication between Electric Vehicles (EV), including Battery Electric Vehicles and Plug-In Hybrid Electric Vehicles, and the Electric Vehicle Supply Equipment (EVSE). As the communication parts of this generic equipment are the Electric Vehicle Communication Controller (EVCC) and the Supply Equipment Communication Controller (SECC), ISO 15118 describes the communication between these components. Although ISO 15118 is oriented to the charging of electric road vehicles, it is open for other vehicles as well.

This part of ISO 15118 specifies terms and definitions, general requirements and use cases as the basis for the other parts of ISO 15118. It provides a general overview and a common understanding of aspects influencing the charge process, payment and load levelling.

ISO 15118 does not specify the vehicle internal communication between battery and charging equipment and the communication of the SECC to other actors and equipment (beside some dedicated message elements related to the charging). All connections beyond the SECC, and the method of message exchanging are considered to be out of the scope as specific use cases.

NOTE 1 Electric road vehicles specifically are vehicles in categories M (used for carriage of passengers) and N (used for carriage of goods) (compare ECE/TR ANS/WP.29/78 ev.2). This does not prevent vehicles in other categories from adopting ISO 15118 as well.

NOTE 2 This part of ISO 15118 is destined to orientate the message set of ISO 15118-2. The absence of any particular use case in this part of ISO 15118 does not imply that it shall not put into practice, with the required messages.

NOTE 3 This part of ISO 15118 and ISO 15118-2 are designed to work independent of data transfer medium used. However, this series of documents are made for fitting the specified data link layers in the corresponding documents in this series.

### 2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

IEC 60050, *International electrotechnical vocabulary*

IEC 61851-1, *Electric vehicle conductive charging system — Part 1: General requirements*

ISO/TR 8713, *Electrically propelled road vehicles — Vocabulary*

ISO 15118-2, *Road vehicles — Vehicle to grid communication interface — Part 2: Network and application protocol requirements*

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