



**NSAI**  
Standards

Irish Standard  
I.S. EN ISO 15118-2:2016

Road vehicles - Vehicle-to-grid  
communication Interface - Part 2: Network  
and application protocol requirements (ISO  
15118-2:2014)

## I.S. EN ISO 15118-2:2016

*Incorporating amendments/corrigenda/National Annexes issued since publication:*

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## National Foreword

I.S. EN ISO 15118-2:2016 is the adopted Irish version of the European Document EN ISO 15118-2:2016, Road vehicles - Vehicle-to-grid communication Interface - Part 2: Network and application protocol requirements (ISO 15118-2:2014)

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EUROPEAN STANDARD

**EN ISO 15118-2**

NORME EUROPÉENNE

EUROPÄISCHE NORM

April 2016

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ICS 43.120

English Version

**Road vehicles - Vehicle-to-grid communication Interface -  
Part 2: Network and application protocol requirements  
(ISO 15118-2:2014)**

Véhicules routiers - Interface de communication entre  
véhicule et réseau électrique - Partie 2: Exigences du  
protocole d'application et du réseau (ISO 15118-  
2:2014)

Straßenfahrzeuge - Kommunikationsschnittstelle  
zwischen Fahrzeug und Ladestation - Teil 2:  
Anforderungen an das Netzwerk- und  
Anwendungsprotokoll (ISO 15118-2:2014)

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EUROPÄISCHES KOMITEE FÜR NORMUNG

**CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels**

**EN ISO 15118-2:2016 (E)**

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## **European foreword**

The text of ISO 15118-2:2014 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 15118-2:2016 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of an identical text or by endorsement, at the latest by October 2016, and conflicting national standards shall be withdrawn at the latest by October 2016.

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

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### **Endorsement notice**

The text of ISO 15118-2:2014 has been approved by CEN as EN ISO 15118-2:2016 without any modification.

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# INTERNATIONAL STANDARD

**ISO  
15118-2**

First edition  
2014-04-01

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## **Road vehicles — Vehicle-to-Grid Communication Interface —**

### **Part 2: Network and application protocol requirements**

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

*Partie 2: Exigences du protocole d'application et du réseau*

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Reference number  
ISO 15118-2:2014(E)



**ISO 15118-2:2014(E)**



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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](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 (see [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.

For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT) see the following URL: Foreword - Supplementary information

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

ISO 15118-2 was developed in conjunction 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<sup>1</sup>*

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<sup>1</sup> To be published.

## **ISO 15118-2:2014(E)**

### **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<sub>2</sub> emissions for road transportation if the electricity is produced from renewable sources. To charge the batteries of such vehicles, specific charging infra-structure 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 economical 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.

# Road vehicles — Vehicle-to-Grid Communication Interface — Part 2: Network and application protocol requirements

## 1 Scope

This part of ISO 15118 specifies the communication between battery electric vehicles (BEV) or plug-in hybrid electric vehicles (PHEV) and the Electric Vehicle Supply Equipment. The application layer message set defined in this part of ISO 15118 is designed to support the energy transfer from an EVSE to an EV. ISO 15118-1 contains additional use case elements (Part 1 Use Case Element IDs: F4 and F5) describing the bidirectional energy transfer. The implementation of these use cases requires enhancements of the application layer message set defined herein. The definitions of these additional requirements will be subject of the next revision of this International Standard.

The purpose of this part of ISO 15118 is to detail the communication between an EV (BEV or a PHEV) and an EVSE. Aspects are specified to detect a vehicle in a communication network and enable an Internet Protocol (IP) based communication between EVCC and SECC.



### Key

- 1 Scope of ISO/IEC FDIS 15118-2:2013(E)
- 2 Message definition considers use cases defined for communication between SECC to SA

**Figure 1 — Communication relationship among EVCC, SECC and secondary actor**

This part of ISO 15118 defines messages, data model, XML/EXI based data representation format, usage of V2GTP, TLS, TCP and IPv6. In addition, it describes how data link layer services can be accessed from a layer 3 perspective. The Data Link Layer and Physical Layer functionality is described in ISO 15118-3.

## 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.

ISO 3166-1, *Codes for the representation of names of countries and their subdivisions — Part 1: Country codes*

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

IEC 61851-1, *Electric vehicle conductive charging system — Part 1: General requirements (Ed 2.0 2010)*

IEC 61851-22, *Electric vehicle conductive charging system - Part 22: AC electric vehicle charging station*

IEC CDV 61851-23, *Electric vehicle conductive charging system - Part 23: D.C. electric vehicle charging station (Ed 1.0 2012)*

IEC 62196, *Plugs, socket-outlets, vehicle connectors and vehicle inlets - Conductive charging of electric vehicles*

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