
**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*

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

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



iTeh Standards
(<https://standards.iteh.ai>)
Document Preview

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

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



COPYRIGHT PROTECTED DOCUMENT

© ISO 2018

All rights reserved. Unless otherwise specified, or required in the context of its implementation, no part of this publication may be reproduced or utilized otherwise in any form or by any means, electronic or mechanical, including photocopying, or posting on the internet or an intranet, without prior written permission. Permission can be requested from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office
CP 401 • Ch. de Blandonnet 8
CH-1214 Vernier, Geneva
Phone: +41 22 749 01 11
Fax: +41 22 749 09 47
Email: copyright@iso.org
Website: www.iso.org

Published in Switzerland

Contents

Page

Foreword	iv
Introduction	v
1 Scope	1
2 Normative references	1
3 Terms and definitions	1
4 Abbreviated terms	2
5 Conventions	3
5.1 Definition of OSI based services.....	3
5.2 Requirement structure.....	3
6 System architecture	3
7 Wireless communication requirements	4
7.1 Overview.....	4
7.2 SECC requirements.....	5
7.2.1 General.....	5
7.2.2 WLAN technology.....	5
7.2.3 WLAN frequency and channel.....	6
7.2.4 SECC channel scanning and selection.....	8
7.2.5 Quality of service.....	9
7.2.6 Association support.....	10
7.2.7 Layer 2 interfaces.....	14
7.2.8 Pairing.....	14
7.3 EVCC requirements.....	15
7.3.1 General.....	15
7.3.2 WLAN technology.....	15
7.3.3 WLAN frequency and channel.....	15
7.3.4 Quality of service.....	16
7.3.5 Association support.....	16
7.3.6 Layer 2 interfaces.....	18
7.4 Security.....	19
Annex A (informative) Mounting location of wireless communication module and antenna	20
Annex B (informative) Interference scan and auto channel selection example	24
Annex C (informative) Introduction of service available area	27
Annex D (informative) National regulations in usage of U-NII bands	29
Bibliography	34

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).

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).

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.

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

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 CO₂ 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 15118-1¹⁾ and ISO 15118-2²⁾, respectively.

iteh Standards
(<https://standards.iteh.ai>)
Document Preview

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

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

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.

