

INTERNATIONAL STANDARD

REDLINE VERSION

Information exchange for electric vehicle charging roaming service –
Part 1: General

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

[IEC 63119-1:2025](https://standards.iteh.ai/catalog/standards/iec/a5cb818c-866e-4041-904f-45871fe9dada/iec-63119-1-2025)

<https://standards.iteh.ai/catalog/standards/iec/a5cb818c-866e-4041-904f-45871fe9dada/iec-63119-1-2025>



THIS PUBLICATION IS COPYRIGHT PROTECTED

Copyright © 2025 IEC, Geneva, Switzerland

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from either IEC or IEC's member National Committee in the country of the requester. If you have any questions about IEC copyright or have an enquiry about obtaining additional rights to this publication, please contact the address below or your local IEC member National Committee for further information.

IEC Secretariat
3, rue de Varembe
CH-1211 Geneva 20
Switzerland

Tel.: +41 22 919 02 11
info@iec.ch
www.iec.ch

About the IEC

The International Electrotechnical Commission (IEC) is the leading global organization that prepares and publishes International Standards for all electrical, electronic and related technologies.

About IEC publications

The technical content of IEC publications is kept under constant review by the IEC. Please make sure that you have the latest edition, a corrigendum or an amendment might have been published.

IEC publications search -

webstore.iec.ch/advsearchform

The advanced search enables to find IEC publications by a variety of criteria (reference number, text, technical committee, ...). It also gives information on projects, replaced and withdrawn publications.

IEC Just Published - webstore.iec.ch/justpublished

Stay up to date on all new IEC publications. Just Published details all new publications released. Available online and once a month by email.

IEC Customer Service Centre - webstore.iec.ch/csc

If you wish to give us your feedback on this publication or need further assistance, please contact the Customer Service Centre: sales@iec.ch.

IEC Products & Services Portal - products.iec.ch

Discover our powerful search engine and read freely all the publications previews, graphical symbols and the glossary. With a subscription you will always have access to up to date content tailored to your needs.

Electropedia - www.electropedia.org

The world's leading online dictionary on electrotechnology, containing more than 22 500 terminological entries in English and French, with equivalent terms in 25 additional languages. Also known as the International Electrotechnical Vocabulary (IEV) online.

[IEC 63119-1:2025](https://standards.iteh.ai/catalog/standards/iec/a5cb818c-866e-4041-904f-45871fe9dada/iec-63119-1-2025)

<https://standards.iteh.ai/catalog/standards/iec/a5cb818c-866e-4041-904f-45871fe9dada/iec-63119-1-2025>

Warning! Make sure that you obtained this publication from an authorized distributor.

CONTENTS

FOREWORD	2
1 Scope	1
2 Normative references	5
3 Terms and definitions	5
4 General description for roaming service models	6
4.1 General.....	8
4.2 System architecture	11
4.3 Communication interfaces.....	11
5 Classification of roaming service models – Roaming modes	14
6 Communication – Protocol stack.....	14
7 Security and privacy	15
7.1 General requirements	15
7.2 Authentication and authorization	15
7.3 Data transfer security.....	15
8 Privacy mechanisms.....	15
Bibliography.....	17
Figure 1 – Overview of roaming and relevant technologies	10
Figure 2 – Overview of system architecture	11
Figure 3 – Overview of EV services and communication interfaces.....	13
Figure 4 – Overview of EV roaming classification.....	14
Table 1 – Network communication protocols	15

[IEC 63119-1:2025](https://standards.iteh.ai/catalog/standards/iec/a5cb818c-866e-4041-904f-45871fe9dada/iec-63119-1-2025)

<https://standards.iteh.ai/catalog/standards/iec/a5cb818c-866e-4041-904f-45871fe9dada/iec-63119-1-2025>

INTERNATIONAL ELECTROTECHNICAL COMMISSION

**Information exchange for electric vehicle charging roaming service -
Part 1: General****FOREWORD**

- 1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, IEC publishes International Standards, Technical Specifications, Technical Reports, Publicly Available Specifications (PAS) and Guides (hereafter referred to as "IEC Publication(s)"). Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
- 2) The formal decisions or agreements of IEC on technical matters express, as nearly as possible, an international consensus of opinion on the relevant subjects since each technical committee has representation from all interested IEC National Committees.
- 3) IEC Publications have the form of recommendations for international use and are accepted by IEC National Committees in that sense. While all reasonable efforts are made to ensure that the technical content of IEC Publications is accurate, IEC cannot be held responsible for the way in which they are used or for any misinterpretation by any end user.
- 4) In order to promote international uniformity, IEC National Committees undertake to apply IEC Publications transparently to the maximum extent possible in their national and regional publications. Any divergence between any IEC Publication and the corresponding national or regional publication shall be clearly indicated in the latter.
- 5) IEC itself does not provide any attestation of conformity. Independent certification bodies provide conformity assessment services and, in some areas, access to IEC marks of conformity. IEC is not responsible for any services carried out by independent certification bodies.
- 6) All users should ensure that they have the latest edition of this publication.
- 7) No liability shall attach to IEC or its directors, employees, servants or agents including individual experts and members of its technical committees and IEC National Committees for any personal injury, property damage or other damage of any nature whatsoever, whether direct or indirect, or for costs (including legal fees) and expenses arising out of the publication, use of, or reliance upon, this IEC Publication or any other IEC Publications.
- 8) Attention is drawn to the Normative references cited in this publication. Use of the referenced publications is indispensable for the correct application of this publication.
- 9) IEC draws attention to the possibility that the implementation of this document may involve the use of (a) patent(s). IEC takes no position concerning the evidence, validity or applicability of any claimed patent rights in respect thereof. As of the date of publication of this document, IEC had not received notice of (a) patent(s), which may be required to implement this document. However, implementers are cautioned that this may not represent the latest information, which may be obtained from the patent database available at <https://patents.iec.ch>. IEC shall not be held responsible for identifying any or all such patent rights.

This redline version of the official IEC Standard allows the user to identify the changes made to the previous edition IEC 63119-1:2019. A vertical bar appears in the margin wherever a change has been made. Additions are in green text, deletions are in strikethrough red text.

IEC 63119-1 has been prepared by IEC technical committee 69: Electrical power/energy systems for electrically propelled road vehicles and industrial trucks. It is an International Standard.

This second edition cancels and replaces the first edition published in 2019.

This edition includes the following significant technical changes with respect to the previous edition:

- a) the scope is expanded to include differentiation between home and visited service provider roles and adds an explicit definition of roaming entity;
- b) adds definitions for "home charging service provider (home-CSP)", "visited charging station operator (visited-CSO)", and "charging detail record (CDR)", and expands related terms such as "service" and "roaming entity";
- c) introduces abbreviation variants for "home-CSP" and "visited-CSO" in the terminology, aligning with North American and European conventions;
- d) updates the communication protocol stack by adopting a newer TLS version (upgraded from 1.2 to 1.3);
- e) system architecture and communication interfaces include detailed interactions between home-CSP and visited-CSO;
- f) adds a definition for "service" to cover a broader range of applications such as parking and reservation management;
- g) adds a distinction between "charging detail record (CDR)" and "service detail record (SDR)" and clarifies their relationship in the terminology;
- h) enhances the description of user credential transfer methods in communication interfaces with greater diversity;
- i) enhances the description of the mixed mode in the classification of roaming service models, emphasizing improved user experience through faster response times.

The text of this International Standard is based on the following documents:

Draft	Report on voting
69/1050/FDIS	69/1063/RVD

Full information on the voting for its approval can be found in the report on voting indicated in the above table.

The language used for the development of this International Standard is English.

This document was drafted in accordance with ISO/IEC Directives, Part 2, and developed in accordance with ISO/IEC Directives, Part 1 and ISO/IEC Directives, IEC Supplement, available at www.iec.ch/members_experts/refdocs. The main document types developed by IEC are described in greater detail at www.iec.ch/publications.

A list of all parts in the IEC 63119 series, published under the general title *Information exchange for electric vehicle charging roaming service*, can be found on the IEC website.