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Open Charge Point Protocol 2.1

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IEC 63584-210 has been prepared by IEC technical committee 69: Electrical power/energy transfer systems for electrically propelled road vehicles and industrial trucks. It is an International Standard.

It is based on Open Charge Point Protocol 2.1 and was submitted as a Fast-Track document.

This second edition cancels and replaces the first edition published in 2025. This edition constitutes a technical revision.

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

a) part 5 and 6 have been introduced, which contain the certification profiles responsible for the test cases;
b) resolved issues and added clarifications to the specification, most of which are related to newly in OCPP 2.1 introduced features like; DER control, V2X, ISO 15118-20, based on lessons learned from the market;
c) all OCPP 2.0.1 errata also have been incorporated into OCPP 2.1, due to the versions being backwards-compatible.

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

Draft	Report on voting
69/1124/CDV	69/1149/RVC

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 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.

The structure and editorial rules used in this publication reflect the practice of the organization which submitted it.

The committee has decided that the contents of this document will remain unchanged until the stability date indicated on the IEC website under webstore.iec.ch in the data related to the specific document. At this date, the document will be

– reconfirmed,
– withdrawn, or
– revised.



OCPP 2.1

Part 0 - Introduction

Edition 2, 2025-12-03

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Version History

Version	Date	Description
2.1 Edition 2	2025-12-03	OCPP 2.1 Edition 2. All errata from OCPP 2.1 Part 0 until and including Errata 2025-11 have been merged into this version of the specification.
2.1 Edition 1	2025-01-23	OCPP 2.1 Edition 1

Chapter 1. Introduction

Electric Vehicles (EVs) are becoming the new standard for mobility all over the world. This development is only possible with a good coverage of Charging Stations. To advance the roll out of charging infrastructure, open communication standards play a key role: to enable switching from charging network without necessarily replacing all the Charging Stations, to encourage innovation and cost effectiveness and to allow many and diverse players participate in this new industry.

Additionally, the EV charging infrastructure is part of the Smart Grid, a larger and still evolving ecosystem of actors, devices and protocols. In this Smart Grid ecosystem, open communication standards are key enablers for bidirectional power flows, real time information exchange, demand control and eMobility services.

The Open Charge Point Protocol (OCPP) is the industry-supported de facto standard for communication between a Charging Station and a Charging Station Management System (CSMS) and is designed to accommodate any type of charging technique. OCPP is an open standard with no cost or licensing barriers for adoption.

1.1. OCPP version 2.1

This specification defines version 2.1 of OCPP.

Version 2.1 is an extension of OCPP 2.0.1. OCPP 2.1 has its own JSON schemas, but the schemas are OCPP 2.0.1 schemas that have been extended with optional fields that are used by OCPP 2.1 functionality. With the minor exceptions mentioned below, all application logic developed for OCPP 2.0.1 will continue to work in OCPP 2.1 without any changes. The new features of OCPP 2.1, of course, require new application logic.

Use case A02 & A03

The application logic in a CSMS for OCPP 2.0.1 for use cases A02 & A03 requires a small change in order to work in OCPP 2.1.
The SignCertificateRequest message has been extended with a *requestId* field, such that the resulting CertificateSignedRequest message can be accurately mapped to the request that initiated it. Use of *requestId* is optional for Charging Station, but when present, CSMS will have to use it in the subsequent CertificateSignedRequest message.
Note, that the updated application logic remains valid to use in OCPP 2.0.1.

Use case N02

The application logic in a Charging Station for OCPP 2.0.1 for use case N02 requires a small change in order to work for OCPP 2.1.
The message NotifyMonitoringReportRequest has been extended with a required field in VariableMonitoringType: *eventNotificationType*. Charging Station has to provide this field. It provides essential information to CSMS about the type of monitor (HardWiredMonitor, PreconfiguredMonitor, CustomMonitor) that was missing in OCPP 2.0.1. Existing OCPP 2.0.1 logic in a CSMS that is not aware of this new field, will continue to work.

1.2. Terms and abbreviations

This section contains the terminology and abbreviations that are used throughout this document.

1.2.1. Terms

Term	Meaning
Charging Station	The Charging Station is the physical system where an EV can be charged. A Charging Station has one or more EVSEs.
Charging Station Management System (CSMS)	Charging Station Management System: manages Charging Stations and has the information for authorizing Users for using its Charging Stations.
Electric Vehicle Supply Equipment (EVSE)	EVSE is considered as an independently operated and managed part of the Charging Station that can deliver energy to one EV at a time.
Energy Management System (EMS)	In this document this is defined as a device that manages the local loads (consumption and production) based on local and/or contractual constraints and/or contractual incentives. It has additional inputs, such as sensors and controls from e.g. PV, battery storage.

1.2.2. Abbreviations

Term	Meaning
CSO	Charging Station Operator
CSMS	Charging Station Management System
EMS	Energy Management System.
EV	Electric Vehicle
EVSE	Electric Vehicle Supply Equipment
RFID	Radio-Frequency Identification

1.3. References

Table 1. References

Reference	Description
[IEC61851-1]	IEC 61851-1 2017: EV conductive charging system - Part 1: General requirements. https://webstore.iec.ch/publication/33644
[IEC62559-2:2015]	Definition of the templates for use cases, actor list and requirements list. https://webstore.iec.ch/publication/22349
[ISO15118-1]	ISO 15118-1 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 leveling. https://webstore.iec.ch/publication/9272
[OCPP1.5]	http://www.openchargealliance.org/downloads/
[OCPP1.6]	http://www.openchargealliance.org/downloads/