ACADEMY

Charging Communication with ISO 15118

Virtual Basic Training:

Tuesday, 03/22/2022 and Wednesday, 03/23/2022
04:00 pm – 08:00 pm CET · 07:00 am – 11:00 am PST

Virtual Advanced Training:

Wednesday, 03/30/2022 and Thursday, 03/31/2022
04:00 pm – 08:00 pm CET · 07:00 am – 11:00 am PST

Your trainer:
Dr. Marc Mültin (Switch)

Register now:
www.charin-academy.global

Charging Communication with ISO 15118

General information about the Online Trainings

Get a perfect jumpstart into the industry-approved charging communication standard ISO 15118 in Basic Training. With the Advanced Training you can take a deep dive into the topic of secure charging communication with the user-convenient Plug & Charge feature of ISO 15118. Register now for Basic Training or Advanced Training or take the chance to be part of both.

Training level
Basic Training & Advanced Training (virtual training)

Date
Tuesday, 03/22/2022 and Wednesday, 03/23/2022 (Basic)
Wednesday, 03/30/2022 and Thursday, 03/31/2022 (Advanced)

Time
04:00 pm — 08:00 pm CET · 07:00 am — 11:00 am PST

Your trainer
Dr. Marc Müllin (Switch) is a recognized e-mobility expert and co-author of the ISO 15118 and related international standards. He works now with companies and research institutions across the globe to integrate ISO 15118's promising Plug & Charge feature into their products and innovations. His mission has been to help bring convenient, secure and userfriendly electric vehicle charging to a global audience.

Costs
Basic Training
(single ticket | 03/22 – 03/23/2022):
CharIN Member: € 850,00*
Non-Member: € 1.200,00*

Advanced Training
(single ticket | 03/30 – 03/31/2022):
CharIN Member: € 850,00*
Non-Member: € 1.200,00*

Basic & Advanced Training
(combined ticket |
03/22 – 03/23/2022 and 03/30 – 03/31/2022):
CharIN Member: € 1.450,00*
Non-Member: € 1.900,00*

Contact
CharIN Academy GmbH
Kurfürstendamm 11
10719 Berlin

Phone: +49 30 206 708 930
Fax: +49 30 300 149 315 0
Mail: info@charin-academy.global

www.charin-academy.global

*please note, that the prices are excl. VAT

Charging Communication with ISO 15118

Basic Training (virtual training)

Get a perfect jumpstart into the industry-approved charging communication standard ISO 15118. Learn the key concepts across all communication layers of this future-proof technology so you can actively shape this thriving e-mobility market with your innovative and interoperable EV charging products.

Date
Tuesday, 03/22/2022 and Wednesday, 03/23/2022

Time
04:00 pm — 08:00 pm CET · 07:00 am — 11:00 am PST

What you get

- Thorough introduction to the Combined Charging System (CCS)
- How the EV and charging station build up a stable communication link via CCS hardware, Pulse-Width Modulation (PWM), Signal Level Attenuation Characterization (SLAC), and the SECC discovery protocol (SDP)
- Mechanism used to mutually agree on DIN SPEC 70121 or ISO 15118 as the communication protocol
- Overview of the ISO 15118 document family and its relation to the seven ISO/OSI communication layers
- Identification mechanisms External Identification Means (EIM) & Plug & Charge
- In-depth walk-through of the communication sequence for AC and DC charging
- Available tools for the EV and charging station to do smart charging and renegotiate a charging schedule
- Global support of ISO 15118
- Features and outlook to the next edition of ISO 15118-2 (now called ISO 15118-20)
- Important forums, industry events, and further resources you don't want to miss out on

Who should attend

(Electrical) engineers, managers, product designers, entrepreneurs, technology consultants; anyone interested in the field of e-mobility and charging communication.

As this is an introductory course we welcome participants with no prior experience in the field. Although a background in engineering and / or computer science is beneficial it is not required to understand the topic.

Agenda

Welcome

The Combined Charging System (CCS) — Short introduction of CharIN's CCS related documents

SLAC — The solution to crosstalk in powerline communication between EV & EVSE via CCS

Efficient XML interchange (EXI) — XML on a binary level

SupportedAppProtocol — Choosing a mutually supported protocol

Introduction to ISO 15118 — Overview of the use cases within the ISO 15118

The ISO 15118 document family
- Set up of the ISO 15118 documentation family (15118-1 — 15118-9) and its connection to 7-communication
- layers of the Open Systems Interconnection (OSI)
- Publishing timeline of the single ISO parts & outlook to additional functionalities with edition 2 of ISO 15118

AC and DC charging message sequence

PMaxSchedule and SalesTariff — Influencing the charging schedule
- Negotiation of a charging profile for the vehicle in detail incl. sales tariff information (Grid & supplier oriented incentive to affect the charging profile) & charging parameters

Global support of ISO 15118

Important forums, industry events, and further resources

Charging Communication with ISO 15118

Advanced Training (virtual training)

Take a deep dive into the topic of secure charging communication with the user-convenient Plug & Charge feature of ISO 15118. We'll focus on the certificate concept, necessary public-key infrastructures, encrypted communication via TLS, and XML-based signatures. The conveyed knowledge will enable you to build state-of-the-art secure and user-friendly EV charging products that shape the e-mobility market.

Date
Wednesday, 03/30/2022 and Thursday, 03/31/2022

Time
04:00 pm — 08:00 pm CET · 07:00 am — 11:00 am PST

What you get

- The cryptographic foundations of ISO 15118 to secure the communication
- Understanding digital certificates and digital signatures
- An overview of the ISO 15118 public-key infrastructures
- How the EV and charging station encrypt the communication using Transport Layer Security (TLS)
- How a contract certificate enables a seamless identification and authorization via the Plug & Charge feature
- The backend processes and market roles needed to establish a well-orchestrated Plug & Charge ecosystem (VDE Application Guide VDE-AR-E 2802-100-1)

Who should attend

(Electrical) engineers, managers, product designers, entrepreneurs, technology consultants; anyone interested in the field of e-mobility and Charging Communication.

As this is an advanced course we recommend that participants have prior experience in the field. For the best possible preparation and a smooth learning experience we recommend that participants visit our Basic Training first.

Agenda

Welcome

Cryptographic Foundations of ISO 15118: symmetric and asymmetric cryptosystems, digital certificates and signatures, and key-agreement protocols

The certificate concept and public-key infrastructures outlined in ISO 15118 and their relation to the various e-mobility market roles

Setup of an encrypted communication link between the EV and charging station via TLS (Transport Layer Security) and ISO 15118 certificates

Certificate installation: how a contract certificate enables a seamless identification and authorization via the Plug & Charge feature

In-depth training on the VDE application guide VDE-AR-E 2802-100-1, titled "Certificate handling for electric vehicles, charging infrastructure and backend systems within the framework of ISO 15118". This application guide is the blueprint for establishing a well-orchestrated Plug & Charge ecosystem