

Communication for Charging Systems - Basic Charging and ISO 15118 High-Level Communication (HLC)

Agenda VectorAcademy

Delivery Format:	This course is offered in Remote Format
Duration:	6 hours
Target Group:	Everybody, who needs to understand the principles of AC and DC charging as standardized by ISO 15118 and DIN SPEC 70121
Prerequisites:	Knowledge about digital communication and bit serial data transmission
Goal:	The course gives a comprehensive overview of charging in general and more specific the communication between electric vehicle and charging station. The first part is based on IEC 61851 and explains the fundamental tasks. Furthermore, the main roles and processes during charging and safety related functions will be covered.

1. Overview Charging Systems

- > Standards
- > Roles

2. Charge Authorization and Safety

3. Charging Modes

- > AC Charging
- > DC Charging

4. Low-Level Communication

5. OSI Layers and ISO 15118 Protocol Stack

6. HomePlug Green PHY

7. OSI Layer 2 – 4 Basic Communication

- > Ethernet Basics
- > Internet Protocol (IP)
- > Transmission Control Protocol (TCP) and User Datagram Protocol (UDP)

8. Vehicle-to-Grid Transfer Protocol

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- 9. **SECC Discovery Protocol(SDP), TCP and TLS Connection Set Up**
- 10. **Efficient XML Interchange (EXI)**
- 11. **Vehicle-to-Grid Messages**
 - > AC Charging with ISO 15118
 - > DC Charging with DIN SPEC 70121