

**Charger  
End to End Verification  
Testing**  
March 5, 2024





# End-2-End Verifications Testing and Test environments

# Conducting End-2-End Compliance Testing

## Electric Vehicle Charging Infrastructure



End-2-End testing of Electric Vehicle (EV) charging infrastructure is important contributing to a flawless charging experience for EV drivers with interoperability as a key element

Combined Charging System (CCS) Basic conformance tests and issue the CCS Basic certificate for charging stations, will help to improve interoperability in the field and significantly enhance the charging experience for users

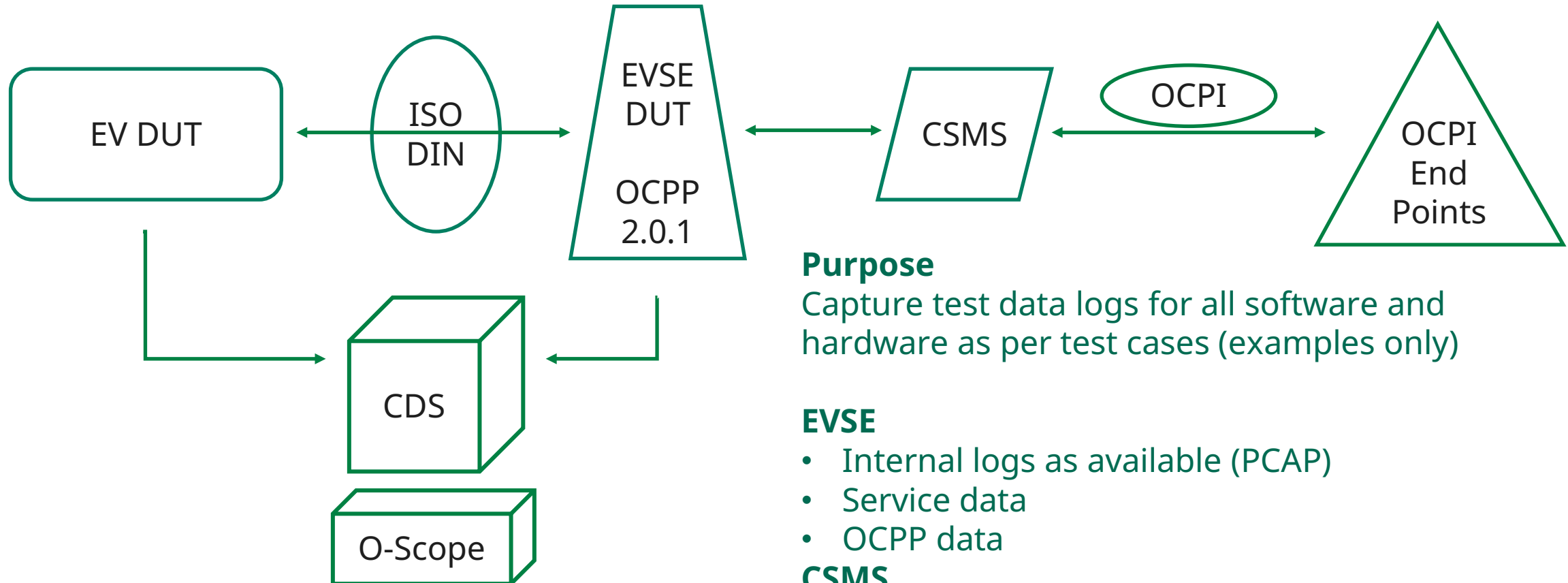
End-to-end testing of EV charging infrastructure, including testing the secure communication between the EV, the charging station, and the back office is necessary in the early stages of development and deployment

Issue recognition and resolution during End-2-End will help improve the standards and the conformance test programs long term



# Considering the Elements in the Test Chain

Example only - Can be more rigorous or less depending on the needs of the test conditions



## Purpose

Capture test data logs for all software and hardware as per test cases (examples only)

## EVSE

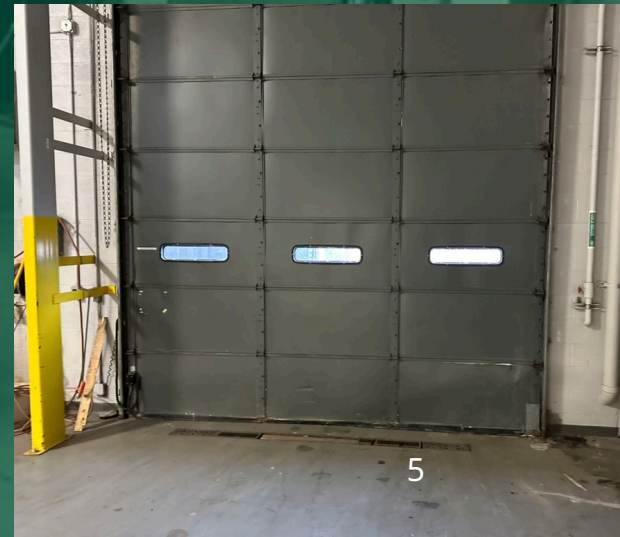
- Internal logs as available (PCAP)
- Service data
- OCPP data

## CSMS

- OCPP
- OCPI
- OPCP

# DEKRA Has Made Charger Testing Easy

- 1) Ample Vehicle Access – @ grade level  
drive in facility doors
- 2) Ample High Voltage power for an Array  
of EV Charger Testing with distribution  
panels ready for specific configurations
- 3) Complete Certification Testing and  
Certifications for OCPP and ISO 15118 –  
3, 2, and 20 with test systems ready for  
max power applications





# Facility Capabilities and Space

DEKRA Plymouth Technical Space



Large open areas & ability to configure for purpose-built systems and test environments

IT capabilities enabled for guests and clients

Ample power and power distribution to support large EV charger projects

Cranes, forklifts make heavy equipment moving less challenging



THANK YOU