White Paper
of Charging Interface Initiative e.V.

CharIN Authorization Guide EIM and Plug & Charge

V1.1

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1. Introduction

Problem Statement:

ISO 15118-2:2014 does not specify the behavior of EVSE, if the authentication with EIM (External identification means, e.g., RFID card,…) is done before plugin.

As a result, there are different implementations in the market regarding the handling of Plug & Charge (P&C) vs. EIM authorization. The following options represent a list that is not exhaustive.

- In case that the charging station is authorized via EIM already, with physically connecting the EV afterwards to the charging station, Plug & Charge (contract-based payment) is sometimes used for authorization additionally and to allow energy transfer.
- Although charging station is authorized via Plug & Charge (contract-based payment) already, EIM can sometimes still be used to authorize the charging session again and to allow energy transfer.

This can lead to following situations:

- Customer could be double authorized.
- Charging session could be started, stopped, and started again.
- Irritation of customer if he recognizes a double authorization. What is used for invoicing?
- Confusion of customer, due to the lack of feedback if Plug & Charge is overruled by EIM or the other way around (i.e., in case of swiping by accident)
- Confusion of customer if he wants to use EIM as authorization method and authorizes with EIM before connecting, and with connecting the authorization starts with Plug & Charge.
- The risk of charging errors is increased due to undefined behavior of EVs.
- Unclarity on how functions like 'opt-out' from automated authorization via P&C can be implemented if EVSE behavior overrules this by default.

The problem is applicable for all use cases of ISO 15118-2 when authorization is required. Free charge/no-authentication is out of scope for this white paper.

The white paper does not specify a technical solution, as it is still being developed/commented on by ISO 15118 experts: EIM (RFID) done before PnC vehcile plugged in (#14) · Issues · PT2 / 15118-2 / User Group · GitLab (elaad.io).

The aim of this document is to raise awareness of field issues and provide background information for CPOs on how to deal with this issue in a customer-oriented way.

2. Proposed interim solution until the solution is implemented in an update to ISO 15118-2

For each charging session only the first authorization (either EIM or Plug & Charge) shall be used for the charging session.

The EVSE shall deny every 2nd authorization method if the charging session is already authorized and charging session is active. The technical implementation for this and other issues will be specified in the upcoming ISO 15118-2 (upcoming amendment).

3. Reference

This document was created by the focus group **Charging Infrastructure** of the CharIN association.

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