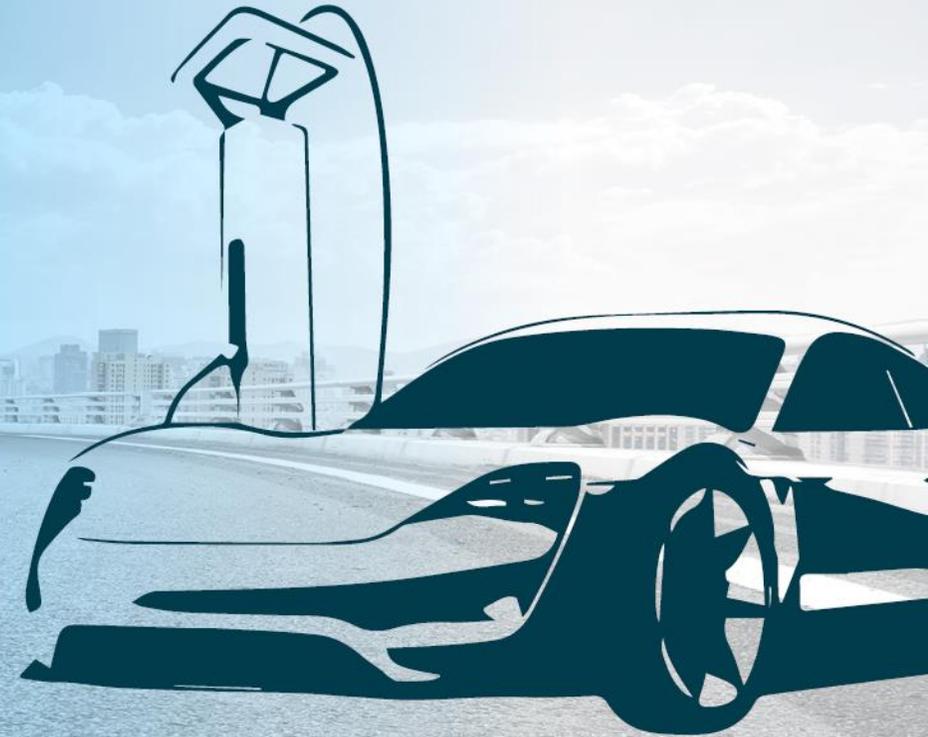


Virtual conference

CharIN Tuesday Europe

June 29, 2021 - Part I



CharIN – Charging Interface Initiative e. V.

Plug & Charge Activities in Europe  
Question & Answer



TUESDAY

**Q:** *What key regulations and key decision would you expect from the European legislator to optimally support roll-out of charging network and services?*

**A:** My expectation from the European Legislation is to define a guideline to ensure the functionality of an open market. This guideline should include the high-level requirements considering each stakeholder, OEM, CPO, eMSP, V2G Root, Pool Operators, and especially customers. We already saw similar challenges by the mobile network operators, and the EU solved the problems seamlessly, e.g., roaming. (Baran Yalcin)

**Q:** *How the V2G root certificate are expected to be changed by the user?*

**A:** The OEMs can change the V2G Roots of the EVs in a service appointment or via an Over-the-Air update. Currently, there is no implementation, which allows the EV owners to manage the V2G Roots in their vehicles. (Baran Yalcin)

**Q:** *How the P&C assigned to a EMP will be changed by the user?.*

**A:** Depending on the implementation, the vehicles can show the user's contracts either in their vehicle App or in the infotainment system to manage the contracts. (Baran Yalcin)

**Q:** *Swapping a Visa card to pay contactless takes one second. What's the benefit of Plug'n Charge?*

**A:** Swiping a Visa card is a good example of what is usually called "Ad-Hoc Payment". "Ad hoc payment" is an interesting way of payment and is considered by the AFI directive as an "universal and basic way to access to charging infrastructure".

The credit-card payment needs a payment terminal on the charging station. This device is costly (setup costs and run costs), especially regarding standard AC charger.

The ad hoc payment is anonymous. This could be considered as an advantage (no enrolment...), by it implies also that no services could be delivered by the operators to unknown customers.

Emobility is scaling up. It means that EV will be used by an ever-larger part of the population, even by people that do not have personal parking place. For these persons charging their car could mean swiping their credit card every day: not so secure, not so convenient!

Plug&Charge will also be used in professional fleet where authenticate the driver or the car could be important, even if there is no payment.

As a conclusion we can say that there is, for sure, a place for credit-card payment, but even if this use case is today very common for ICE vehicles, the use cases for EV should be different and more diverse. (Jean-Marc Rives)

**A:** It is widespread to use ISO 15118 and Plug&Charge as synonyms. But the ISO 15118 is for more than the Plug&Charge functionality. First of all, the ISO 15118 secures the communication between the vehicle and charger with TLS, which is essential to protect both vehicle and charger. After securing the communication, you can choose to pay with Plug&Charge or an external medium, such as RFID, NFC, or Credit Card. Also, bi-directional charging is covered by ISO 15118, which helps the load balancing of the electricity power lines. (Baran Yalcin)

# Questions in regard to Plug and Charge Europe

**Q:** *What will be the difference between the existing Hubject V2G Root CA and the new CharIn Root CA?*

**A:** Technically there is no difference. However, the idea behind this project is, reducing the complexity, which we can see in the near future.

Currently, we have the Hubject V2G Root in the market. However, if the stakeholders do not agree on a central V2G Root, which is governed by a trusted, non-profit organization, we can see many more V2G Roots soon.

This will increase the implementation costs, e.g., each charger needs to store many V2G Roots and renew all the EVSE Leaf Certificates of each V2G Root every three months. (Baran Yalcin)

**Q:** *Will the Charin PKI project take into account the potential new cyber requirements from 15118-20 standard?*

**A:** The CharIN Plug&Charge Project communicated with the ISO 15118 Group and received the project relevant requirements from the 15118-20. Those requirements were added and sent to the bidders in the request for proposal for the PKI. (Bonjad Satvat)

**Q:** *Where is the benefit in setting up now a new Root CA under CharIN, instead of waiting on the next generation of the existing root CA? It would create a lot of effort on multiple sides, if it would get set up now..*

**A:** Every V2G Root Certificate needs a new version every five years. This means we will see the parallel operation of at least two V2G Roots in the next two to three years.

We see this as an excellent opportunity to test and ensure that all systems, protocols, and devices can handle multiple V2G Roots. It is critical to test it now since we do not have too many ISO 15118 compatible chargers and vehicles in the market. (Baran Yalcin)

**Q:** *So, your V2G Root CA is there to replace or compete with Hubject's? Why?*

**A:** No. We carefully defined the Project Scope, not to intervene with the open market and existing systems. The V2G Root itself is only a small part of the whole ISO 15118 PKI Tree. CharIN wants to operate only the V2G Root and Sub 1 level CAs. However, including Hubject, any company can operate CharIN Sub 2 level CAs to create leaf certificates. We need to underline this; a new V2G Root does not mean that the existing one will stop operating immediately. The VDE Application Rule Pools are also not part of the CharIN Plug&Charge Project. (Baran Yalcin)

**Q:** *French association AFIREV estimates the extra-cost of Plug'n Charge to be between 5 to 7 €/year/charge point, and between 5 to 10 cents per charging session. What's the opinion of the panel on this extra-cost?*

**A:** The Plug&Charge may generate extra costs for charging sessions. But it improves also the (cyber)security of the authentication, authorisation, and payment processes. What could be the extra costs of the Fraud management for the operators and for the victims? What could be the cost of a massive cyber-attack on a Charging Infrastructure network and on the grid beyond?

A part of the extra cost could be attached to the Plug&Charge, but another part should be attached to the ISO15118 which offer other services and features. Thus, it has to be compared with the new values generated by the vehicle-grid integration (smartCharging, V2G ...).

As a whole, the meaning of this cost estimation is that it is reasonable enough in regards of the expected benefits of the protocol in terms of improved customer experience, quality and security of service and possible new services. (Jean-Marc Rives)

**Q:** *Mister Rives had talked about CP but all what I find is a guideline that a CP should follow?*

**A:** You're right and sorry if my explanation was not clear. The CP is a document that describes the processes and the commitments of PKI actors. This is the reason why the CP could only be written by the PKI operator that will implement the CP, typically a RootCA.

The Task Force PKI worked about the CP topic, in order to list some "minimal requirements" that PKI actors should meet. The Task Force PKI is a group of persons that represents some players of the e-Mobility industry. It is not able (nor mandated) to decide which actor is validated or approved. But the Task Force PKI is able to describe, as a group of experts, its point of view of what should be the minimal content of a CP for an ISO 15118 PKI.

The CharIN CP document is a guideline that defines the minimum requirements for a dedicated PKI implementation guaranteeing a sufficient level of security. (Jean-Marc Rives)