Charging infrastructure interoperability in Europe ….

….. work in progress

Current tasks

- EV charging Market Situation
- Regulatory framework of this market
- Key proposals

Market description : Terminology

The actors & their roles:

Charge Point Operators :

Operate a public charging network

Electro Mobility Provider / Electro Mobility Service Provider :

Provide e-mobility services to its customers (access to poles, payment, navigation ….)

e-Roaming provider (aim/purpose)

Ensures operational link between service providers and Charging pole operators

Consumer & his payment options

Ad hoc :

Payment without any specific contract (via credit card or phone)

Contract based

Payment is performed through a Service provider with a specific contract. Service provider ensures availability of service among CPOs

Market description : status

- 1000 CPOs

- 100000 poles
  - 2/3 : AC Triphase
  - 3% QC (AC/DC)

QC on highways

Market description: Key figures

- Paying for EV Charging, 2 options:
  - Ad-hoc payment
  - Subscription (contract) based
    - **With RFID TAG or Remotely with an App**

- Issues with ad-hoc charging (legally required)
  - Different approaches used across the EU – NOT consumer friendly
  - Less than 1% of poles with Credit card
  - But all of them remotely controlled : payment SMS, phone ….

- Issues with subscription based charging
  - Consumer having a contract with a specific provider
    - Cannot necessarily use the charging points of a different provider
    - Does not necessarily have an idea about the price he will be charged
  - Not all providers are (yet) inter-connected ⇨ **e-Roaming providers = possible solution**

Market description : regulation

- Alternative fuel directive, sept. 2014
  - Charging Power <=22kW : type 2 socket, Charging power >22kW : AC type2 socket, DC Combo as a minimum
  - Need to ensure interoperability and ad'hoc payment methods
  - National register of public infrastructure
- However too few and too different interpretation
- Set up of STF : Sustainable transport forum to further define this directive
  - Under the Umbrella of EU commission : Member states + Private sector
- Focus on one sub-group : SGEMS – Sub Group e-Mobility Market of services
  - Mixed with private actors players (mainly eMI3 members
  - Associations
  - Municipalities
- **Present here major highlights of this Expert group** (thanks for their contribution)

Registration of actors, ID Issuing

Issue:

To ensure interoperability :

Need to uniquely reference e-Mobility actors

Referencing means :

Registering

Registering contacts

And privde a Unique Identifier referring to each company easuring data exchanges

Need for an organisation to issue those unique identifiers

Current state: only 4 countries have such an ID-issuing organisation

Recommendation of SGEMS:

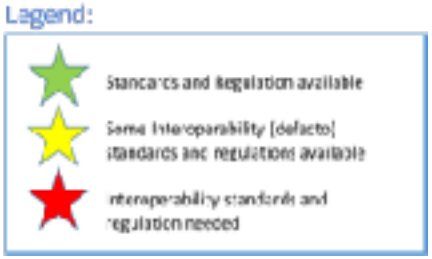
Publish/Promote one unique ID registration process – based on international standards and described in SGEMS deliverable D.3.1.

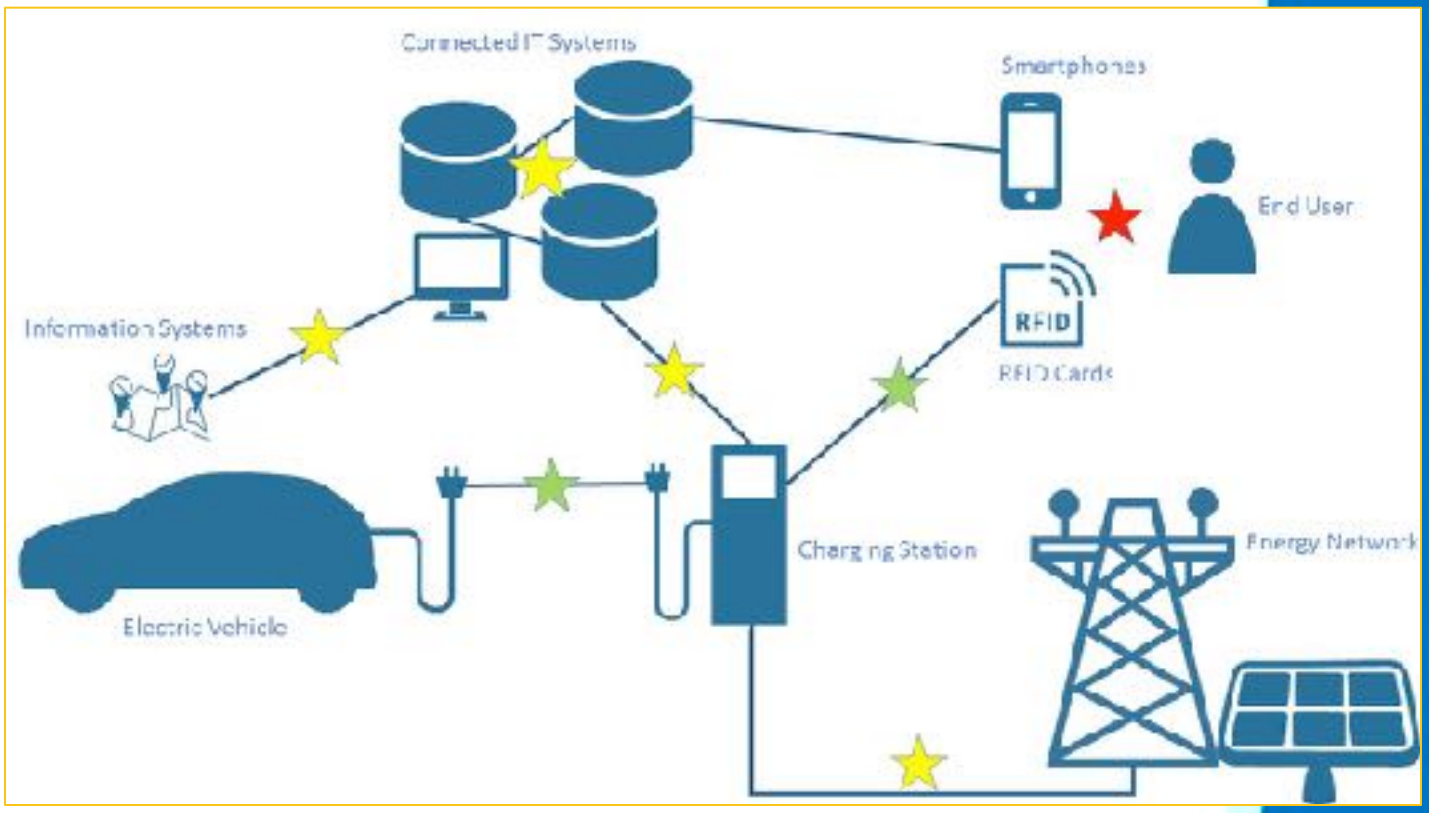
Set up ID-issuing at EU Level (public-private initiative).

Ensure backwards compatibility with ID's that have already been issued

Need for standards / Protocols

Overview of protocols available (and under development) – see Deliverable D.2.1





Back-up

Today the SGEMS recommends to follow these Protocols / Standards:

- Digitally connecting of charging points to back-office IT Systems
  - minimum requirement = Ensure that the charging point is digitally connected
  - Use of Open Charge Point Protocol (OCPP).
- Identification & authentication of EV Users
  - Recommended to install readers that are able to support both MiFare Classic & Mifare Desfire.
  - Use of QR-code / NFC to enable ad-hoc charging + recommend to allow at least the use of Credit Cards / PayPal via smartphone Apps
  - ISO 15118: Plug-and-Charge
- Charging Point information
  - Ensure that data is available on the charging point: location, operational status,…
  - Data should be in a standard format
- Harmonised E-Roaming protocol being developed via (EC TC69 / WG9)
- Interface to Energy networks & markets
  - Metering interface to electricity grid
  - (in future vehicle-grid integration)
- Pricing information to EV user

For more detailed information: see Deliverable D.2.1.

Alternative Fuel Directive : National Register

- To count and compare, a unique description of charging infrastructure is needed
  - eMi3 data model
    - Pool / Station / EVSE / Connector
  - Static Information
    - Location ; Payment methods list ; Available charge-solutions (power, modes); Available connectors
  - Dynamic Information
    - Working/Out of order; Free/Occupied

- Data to be uploaded by Charge Point Operators
  - Legal basis:
    - ITS Directive (timing = function of type of road)
    - Potential for further updating of ITS-specific legislation
    - Mapping of Data-elements to ITS legislation/Specifications (tbd)
    - Translation to Datex-II (under development

Next steps

All detailed deliverables of this group are under final review and be soon accessible

A Memorandum of Understanding (MoU) will be soon proposed by the Expert group for consultation by industry players and public sector

Proposes agreement on key principles:

- Charging infrastructure seamlessly accessible for all consumers (ad-hoc & contract based)
- Transparent information for consumers on charging infrastructure (location, …) & payment
- Interconnection obligation for service providers (tbc)
- Real-time connectivity for all e-mobility infrastructure (Charging stations, IT platforms,…) …

Agreement on technical guidelines Proposes agreement on key principles:

- Standardized protocols and data formats (SGEMS D.2.1.)
- Harmonized data structures (SGEMS D.2.2.)
- Common rules for charging data records

To ensure maximum effectiveness:

- Increase amount of stakeholders which are 'on board'
- + how to ensure the correct mix (i.e. not only industry)
- Ensure public authorities apply recommendations..

Signing ceremony shall occur early next year