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Lecture Session : Public Policy 6 D
• German-French working group on electric mobility (2009)
  – 2 main results
    • Position paper: „The German-French position on infrastructure and interface requirements for E-Mobility.“
    • Definition and development of a cross-border fleet

• Franco-German Ministries Council in Paris (4th of February 2010)
  – Decision on the start of the pilot project mid 2010.

• Project start: March 2011
Initiators and funders

Gefördert durch:

Bundesministerium für Wirtschaft und Technologie
Bundesministerium für Verkehr, Bau und Stadtentwicklung

aufgrund eines Beschlusses des Deutschen Bundestages
The overall vision of the CROME project:

- **Electromobility already meets transportation needs** thanks to a wide range of EVs / PHEVs now on the market.

- **A safe, user-friendly and reliable cross-border e-mobility between France and Germany** can be demonstrated.

- **An interoperable easy-to-use charging infrastructure** (plug, cable, etc.) and **customer-oriented services** (authentication, billing, roaming, reservation, etc) **can already be set up**.
Organized by: Hosted by: In collaboration with: Supported by:

- 25-30 iOn / C-ZERO
- 10 Partner / Berlingo
- 7 Kangoo Z.E.

Germany (BMWi)
- 25 smart ed
- 15 A-Class E-Cell

France (Moselle)
- appr. 30 smart ed

DAIMLER
- 2 Panamera Plug-in
- 3 Boxster E

PSA PEUGEOT CITROËN

cromemonitored fleet of over 100 EVs
Every **EV** can connect to a charging spot.

Every **user** can authenticate and control the charging process of its EV.

**French & German electric vehicles**

**Public charging station or place with type-2 & type-3 plug**

*Information Communication Technology*

**Existing ICT** Service Platforms
- Access / Authentication services
- Charging
- Billing / roaming services
- Smart functionalities
- Operation

**EDF**

**EnBW**

**BOSCH**

**Partners**

**Roaming Service Layer**

**Interoperability**

**Hardware**

**Service**
A cross border eMobility « corridor » with over 50 charging stations

• 25 interoperable public CROME charging stations with 50 charging points
• SODETREL, operator of the French CROME network
• 16 brandnew interoperable public 22 kVA CROME stations with 32 charging spots (Strasbourg, Sarreguemines, Thionville, Forbach)
• 5 brandnew interoperable CROME stations installed in Colmar (operation pending)
• 7 fast charging stations connected in France (Cora/Nissan/EDF), one in Germany
Business model studies

• FRANCE:
  – Public charging stations owned by the Cities
    • CROME « hardware » specifications
    • Call for tender - public investments (at least 6 months before Start of Operation)
  – Operation and supervision by Sodetrel as a global operator
  – Free of charge for use up to now, but tariff will be introduced

• GERMANY:
  – Public charging stations owned and operated by EnBW
  – Tariff

• Full interoperability between French and German CROME network (CROME market place)
• Ability to charge all EVs and PHEVs (CROME, Kleber, meregioMobil)
  – « mode 3 » connection, 3/22 kW AC
  – « mode 3 » type 3 and type 2 socket-outlets
  – Household E/F (mode 2) socket-outlets

• Compliancy with the technical requests of the CROME EV makers in order to upgrade mode 3 charging
  – « mode 3 » over-layers from Renault, PSA, Daimler, Porsche
e.g. RCD 30 mA, A Type, D curve

• Access to the 43 kW fast charging stations from « Corridor Energétique Alsace » (Nissan/Cora/EDF)
  – CHAdeMO DC (IOn/C0, Leaf, …)
  – AC tiphase (ZOE)
• **Unified and simplified access to all the CROME charging stations with contactless ID cards (RFID) in France and Germany**
  – Standards: Mifare Desfire EVI/Ultralight/Classic, NFC ...
  – Possible use of « transportation network » cards

• **Communication between the charging stations and the operator’s IT system**
  – Availability
  – State of order, remote maintenance, ...
  – Different standards: OCPP, ...

• **Simplified customer-oriented billing/payment**
  – Pre-paid card: Kiwhi Pass (France)
  – « Roaming » between cross-border operators
• **Customer-oriented « smartphone » and « Web » apps**
  - Charging spot description
  - Localisation
  - Availability
  - Smart phone apps in Beta testing:
    URL: [http://m.sodetrel.fr/crome/](http://m.sodetrel.fr/crome/)

• **A Market Place between charging infrastructure operators and mobility service operators**
  - No data is stored (broadcast approach)
  - Responsibility and property remains at the data owner
  - Routing and Brokering is controlled by defined agreements
ROAMING OF EMOBILITY SERVICES AND OF MARKET PLACES

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Hubject ...

GIREVE ....

Market Place

Market Place
• A unique wide-scale cross-border field demonstration of e-mobility
• Fully interoperable charging stations with easy access and charging of all EVS over the Crome area
• An assessment based on a wide diversity of new generation EVs, of charging conditions and mode, of standards and of customers (B2B, B2C, fleets, …)
• Customer-oriented charging services:
  • Simplified identification and billing
  • Availability of the charging spots and reservation (investigated)
  • Access to all charging spots within CROME area
  • Roaming of e-mobility services between infrastructure operators
• Test and recommendation on charging infrastructures and services to European standardisation

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