European project: NeMo
Hyper-Network for Electromobility
Background and challenges

- Electric Vehicle charging stations belong to different networks and operate with different conditions of access and payment.
- Charging vehicles can be difficult for users in many cases, especially when they drive outside their local area. This reduces the potential to shift road transport towards electromobility.
- There is a need for:
  - interoperability of electromobility services
  - a common data and information model for objects and services
  - standardisation of information exchange and service provision
  - an open system to integrate existing ICT services in a seamless way
  - access to large data, to forecast demand and optimise charging, minimising impact on the grid.
NeMo project goals and objectives

NeMo will:

• Create a Hyper-Network of new and existing tools, models and services which will provide seamless interoperability of electromobility services, creating an open, distributed and widely accepted ecosystem for electromobility.

• Bring seamless roaming (already successful in mobile telecommunications, credit cards, etc.) into the domain of electromobility services, paving the way for a Pan-European eRoaming framework.
Actors in the NeMo Hyper-Network
> NeMo Hyper-Network environment

**NeMo Environment**

Distributed, decentralized, secured Business Network (B2B)

- Charging Point Operator (A)
- Intelligent Transport Service Provider
- Distribution System Operator
- Charging Point Operator (B)
- Electro-mobility Platform
- End User

**eRoaming Hub**

**LINKING TALENT FOR MOBILITY**
Blockchain for business approach

- To be applied to the NeMo Hyper-Network
- Broader participation, lower costs, increased efficiency

- Shared system of record. Permissioned visibility within own copy
- Ensuring appropriate visibility; transactions are secure, authenticated & verifiable
- Business terms embedded in transaction database & executed with transactions
- All parties agree to network verified transaction

LINKING TALENT FOR MOBILITY
NeMo outputs

- A **Hyper-Network** for the provision of seamless and interoperable electromobility ICT services (for all users and actors)
- **Common Information Models** for objects, data and services
- A set of **ICT interfaces**, to facilitate communication and data access
- A **Core system** capable of providing ICT services
- A set of **Horizontal services** to facilitate the creation of innovative and smart services
- A set of **open APIs** (application programming interfaces) to enable an open B2B Marketplace for electromobility
- A **self-certification mechanism**
- A **pan European eRoaming framework** for electromobility.
NeMo indicators

- General indicators to measure the added-value of NeMo
- Easiness to plan a trip
- Easiness of charging
- In case of charging stations out of order or occupied: consequences of looking for a new charging point

**Cross-country test drives** to measure the before and after situation
- First “before” test drive was in October 2017, from Turin to Barcelona
First conclusions of cross-country test drive (Turin-Grenoble-Narbonne-Barcelona: 950km):
• Significant influence of previous user experience to drive electric vehicles
• Need of a smartphone with data or Wi-Fi to download/use apps
• Need for regular charging when driving at high speed (motorways): stops every 2 to 2,5 hours
• Differences in authentication at charging stations: apps, card, ID, etc.
• Significant difference in design of charging poles, user interface and pricing.
• Not possible to book a charging point.

Final cross-country test drive to (Paris-Barcelona via Germany, Austria, Italy, France) to take place in 2019.
Next steps

NeMo deployment in 5 test sites (including Barcelona)
Different scenarios will demonstrate full operational capabilities
Working with stakeholders:
- providers of electromobility and related services
- charging station manufacturers and operators
- public authorities and infrastructure owners
- electric vehicle manufacturers and fleet operators
- application developers
- researchers, academia, experts, associations
- energy providers and distribution operators…

Join our community and stay informed!
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