NeMo: Hyper-Network for electroMObility

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NeMo at a glance

Call identifier: H2020-GV-2015

Topic: GV-8-2015 Electric vehicles’ enhanced performance and integration into the transport system and the grid

EC funding: € 7.8 million

Duration: October 2016 – September 2019

19 partners

5 test sites & 1 cross-country demonstration

Coordinator: Institute of Communication and Computer Systems, Greece (Dr. Angelos Amditis, a.amditis@iccs.gr)

Website: http://nemo-emobility.eu

Join us at:

LinkedIn NeMo_Electro  @NeMo_Electro
Challenges

- Range limitation / lack of interoperability in electromobility services
- Diverse actors involved
- Impact to the Electric grid network
- Lack of common data exchange and commercial framework

This project has received funding from the European Union’s Horizon 2020 research and innovation programme
NeMo’s Vision

Develop a **Hyper-Network of tools, models and services**, to enable the provision of **seamless and interoperable electromobility services** creating an open, distributed and widely accepted ecosystem for e-mobility

- ✓ **improved accessibility to charging infrastructure and ICT services** through a **pan-European Inter-Roaming framework**
- ✓ **facilitate increased availability, better planning and more secure electric grid operation**
- ✓ **create business opportunities** (increased B2B connectivity)

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NeMo’s strategic objectives

- Common Information Models
- Open APIs to enable an open B2B cloud Marketplace for electromobility
- Core system for provision of electromobility services
- Smart horizontal services
- Services self-certification mechanism
- Business Alliance for ElectroMobility (BAEM)
NeMo Common Information Models

- One of the pillars of NeMo Hyper-Network is the possibility to exchange data using a common NeMo meta-language

- Common Information Models (CIM)
- Data translators and common interfaces
- Smart Processing and Data Management algorithms
- Inter-roaming protocol
CIM Location in the Hyper-Network

- New services will generate and exchange data according to the CIM
- Data translators will enable the translation of data of already existing services to the NeMo CIM
- CIM is continuously updated
NeMo Inter-roaming protocol

Contributes to a Pan European eRoaming framework, by allowing:

- direct communication between eRoaming platforms
- publishing of eRoaming platforms’ services to the NeMo Hyper-Network, providing eRoaming features, like any other NeMo service
NeMo Hyper-Network

NeMo Business Network

- Shared distributed Database / Ledger:
  1. Partner Management
  2. Services Marketplace
  3. Contract Management

B2B services CIM

- Charge Point Operator (CPO)
- Electro Mobility (service) Provider (EMP)

All participants have access to same data

NeMo Nodes operated by Business partners

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Indicative NeMo services

Horizontal Hyper-Network services:
- Electromobility actors’ monitoring and profiling
- Finder and optimiser
- Brokerage
- Service pricing (static and dynamic)

EV driver / owner services:
- Smart navigation and journey planning
- Wireless authentication solution
- Navigation to Charging Point based on user and grid requirements

Grid related services:
- Global customer charging behaviour
- Grid load management
- Load forecasting due to EV charging
- Local energy management

EV and battery related services:
- Adaptive State-of-Charge limit
- Capacity calculation; Load management; etc.

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NeMo Test sites

- Five test sites across Europe to evaluate the NeMo results

**French Test Site**
- ✓ eMobility Report
- ✓ Vehicle preconditioning

**Spanish Test Site**
- ✓ Local Interoperability
- ✓ Horizontal services
- ✓ Booking service

**German Test Site**
- ✓ Capabilities of NeMo Hyper-Network

**Austrian Test Site**
- ✓ Smart charging services
- ✓ Grid services

**Italian Test Site**
- ✓ Itinerary planning considering security features

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NeMo Test sites

- Cross-country demonstration test drive in 2019
  - Evaluation of the post-NeMo situation for real users
  - Itinerary Planning
  - Cross-provider / border booking authorisation and payment management
Opening the NeMo Hyper-Network

PROVIDE COMPETITIVENESS

- Cost savings
- Enable business relations
- Europe wide

EASE THE CREATION OF INNOVATIVE EMOBILITY SERVICES

- Harmonized services to improve customer experience (Common Information Model)
- Gather actors to create added value services

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Business Alliance for ElectroMobility (BAEM)

- The Business Alliance for Electro-Mobility (BAEM) will take over the Hyper-Network from 1st October 2019.
- The BAEM is proposed to be a not-for-profit membership association (legal entity), composed of:
  - BAEM Board Members
  - BAEM Partners (service providers, service requestors, possibly also stakeholders)
  - Hyper-Network Partners (users who are accredited as being compliant with the relevant protocols and procedures)
- Until the project end:
  - Service providers and requestors are invited to join as a Hyper-Network partner
  - Enrolment via contact with the NeMo Coordinator (see website) or a NeMo partner
  - Bilateral presentation and discussion, followed by signature of a Memorandum of Understanding
NeMo impact

- Enable Information exchange among all involved actors
- Easy creation and delivery to a wide audience of innovative, interoperable electromobility services via an open cloud marketplace
- Integration of smart-grid applications and services, to support the EVs integration in the electricity grid, by optimisation of electricity supply compared to demand.
NeMo long-term impact

- Enhanced driver satisfaction: “Charge anywhere & anytime” across Europe via a single identification, authorisation & payment method

- Improved attractiveness of electric vehicles
- Facilitation of EVs mass adoption
Invitation to NeMo

☑ JOIN the NeMo Stakeholder Forum
  • Register via https://nemo-emobility.eu/nemo-forum/ or the NeMo LinkedIn group
  • Remain updated on all project news, results and events
  • Register your interest in joining the Hyper-Network as a developer, provider or user of services.

☑ PARTICIPATE in the upcoming NeMo Hackathon and Webinars → Early 2019
  • Contribute to the optimisation of the Hyper-Network Tools and Service Creation Environment

☑ ATTEND the FINAL EVENT in September 2019

☑ Follow us:
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  • Join us at: LinkedIn NeMo_Electro  @NeMo_Electro

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