WHAT IS THE NeMo HYPER-NETWORK & HOW WILL IT WORK?

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What is the problem?

**Electro Vehicle range and charging infrastructure**
- Limitation to mobility and usability caused by the lack of interoperability.

**Data exchange**
- The provision of interoperable & seamless ICT services on a pan-European level is hindered by the lack of a common data & information model and the lack of a common framework for commercial agreements.

**Diverse eRoaming platforms**
- Problem of interoperability between the existing platforms and lack of standardization regarding information exchange and service provision.

**Electric grid network**
- The electromobility ecosystem is not connected to the electric grid in a sustainable way.
NeMo: Hyper- Network for electroMobility

wants
to 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
Stakeholders in the ecosystem of eMobility are **not visible** and **not interconnected**.
Actors in the NeMo Hyper-Network
The **NeMo Business Network** provides the decentralized and open environment for seamless integration of data and services.
NeMo Hyper-Network: What if...

Distributed, decentralized, secured Business Network (B2B)

NeMo Environment

End User

CPO #A

ITSP #A

DSO #A

CPO #B

eRoaming Hub #A

eRoaming Hub #B

ITSP #B

DSO #B
Blockchain for Business...

Shared system of record. Permissioned visibility within own copy

Shared ledger

Ensuring appropriate visibility; transactions are secure, authenticated & verifiable

Privacy

Smart contract

Business terms embedded in transaction database & executed with transactions

Consensus

All parties agree to network verified transaction

... broader participation, lower costs, increased efficiency
How will Blockchain change Business?

Without Blockchain

With Blockchain
What’s IBM’s contribution in the NeMo EU project?

IBM

- IBM knows enterprise needs and workloads
- IBM Cloud elevates innovation
- IBM Watson APIs available on IBM Cloud
- IBM is the founding member of Hyperledger

IBM Bluemix

- Bluemix is the cloud platform encompassing Infrastructure, Developer and Domain services
- Bluemix offers the most complete set of integrated data and analytics available
- The most advanced cloud platform that weaves together services, infrastructure and data

IBM Blockchain

- full range of enterprise ready blockchain services
- the best and high secure infrastructure for blockchain
- proven engagement model
- Deep cryptography
- High Secure Blockchain Network with System Z crypto hardware
Building Blocks of the NeMO Hyper-Network

Service Creation
- Planning
- Requirements & Design
- Code and Build
- Test and Debug
- Simulation
- Frameworks & Libraries
- Tooling
- Communication
- Collaboration
- Change Management
- Quality Assurance

Service Delivery
- Business Services
  - Service Store
  - Business Partner Mgmt
  - Contract Mgmt
  - Interface to OEM backend
- Service Brokerage
  - Service Requester Access Gateway
  - Service Proxy Environment
  - Service Finder and optimiser
  - Service Aggregation Engine
- Service Management
  - Service Store
  - Business Partner Mgmt
  - Contract Mgmt
- Service Execution
  - Actors Monitoring & Profiling
  - Rating / Pricing
- Electromobility Services
  - Grid Services
  - EV User Services
  - EV & Battery Services

Data Management
- Data Translators
- Business Partner Data Management
- Smart Processing Algorithms
- Operational Data Store

Analytics and Optimisation
- Information Visualisation
- Service Optimiser
- Predictive Analysis
- Anomaly Detection

Security and Compliance
- Authentication
- Authorisation
- Identity & Access Mgmt
- Monitoring / Auditing
- Federation
- Data Privacy

Horizontal Services
- Actors Monitoring & Profiling
- Rating / Pricing

Frameworks & Libraries
- Tooling
- Change Management
- Quality Assurance

Operational Data Store
- Information Visualisation
- Service Optimiser
- Predictive Analysis
- Anomaly Detection

Distributed Ledger Technology (DLT)

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NeMo will change electromobility in the near future...

Public authorities & policy makers
- Support of EU “Clean Power” directive
- Reduction of dependence on fossil fuels
- Speed up of shift from ICE to EV use

Research institutes & universities
- Generation of innovative approaches & ideas
- Integration of recognitions into research institutes’ and universities curricula

Industries & SMEs
- Fostering the growth of the EV market
- EMPs & SMEs:
  • Tools for a rapid & cost effective development of new services & products through the open market cloud
  • Third-party developers:
    • Create innovative ICT businesses
    • Offer customized services
    • Availability to wider public

CPOs & DSOs
- Optimization of energy sector cooperation, management & service offerings

End Users
“Charge anywhere & anytime” across Europe via sole identification, authorization & payment method

Tools for a rapid & cost effective development of new services & products through the open market cloud
- Third-party developers:
  • Create innovative ICT businesses
  • Offer customized services
  • Availability to wider public
Thank you!

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