EVS27

Barcelona, 20/11/2013

Flemish Living Lab Electric Vehicles

Carlo Mol

Programme Office
Innovations from lab to real-life!

Innovation is a costly process. Indeed only one out of 3000 product ideas makes it on the market, meaning that there are hundreds of unsuccessful ICT products beyond every success. Even successful products may be far from being user friendly. Surveys show that 75% of all users find their ICT tools more stressing than relaxing. In such a context, user-centric validation can play an important role in speeding up effectively the innovation process through addressing the actual user needs.

Living Labs are open innovation environments in real-life settings, in which user-driven innovation is fully integrated within the co-creation process of new services, products and societal infrastructures. In recent years, Living Labs have become a powerful instrument for effectively involving the user at all stages of the research, development and innovation process, thereby contributing to European competitiveness and growth.
Flemish Living Lab : 2011-2014

- Call end 2010 for setting up a “Living Lab Electric Vehicles” to facilitate and accelerate the innovation and adoption of electric vehicles in the Flemish region.

- Set up an open “real-life” innovation platform in which innovations can be tested by representative end users in their own living and working environment.

- Decision Flemish Government (15/7/2011) : Approval of 5 different platforms (3 years)

- Programme Office
Open “real-life” innovation platform

- **5 Platforms**
  - Funding: 16,25 m€
  - Budget: 27 m€
  - 71 unique partners
    - 48 companies
    - 8 universities/research
    - 15 local governments

- Budgets mainly for **investment in open test infrastructure (vehicles, chargepoints, dataloggers, ICT)**
- Operating cost to keep platform up and running (testpopulation, communication, …)

- **Programme Office**
  - Central point of contact, support of platforms, facilitate common working groups, …

- **Project**
  - Research projects making use of platform infrastructure, data, knowledge, …
  - Open innovation platform: also **external companies (= users)** can initiate projects
  - Projects need to find budget via existing channels like IWT, Interreg, ERA-NET, Horizon 2020, …
Research topics
Flemish Living Lab Electric Vehicles

- 5 Platforms with different focus on research topics:
  - **Technology**:
    - Electric vehicles (bike, scooter, car, van, bus, truck), drivetrain components, batteries, …
    - Charging infrastructure (public and semi-public domain)
  - **Energy**:
    - Renewable energy integration, microgrids, grid impact, aggregator role, …
  - **Mobility**:
    - Mobility behaviour, new mobility concepts (multi-modal, shared, …), …
  - New products/services/business models, feedback end users, …
  - Results: Economic & Societal Benefits
5 Platforms
Flemish Living Lab Electric Vehicles
5 Platforms
Flemish Living Lab Electric Vehicles
Flemish Living Lab Electric Vehicles

Jaarverslag over het eerste werkingsjaar

Tussentijds verslag – midden 2013

Programme Office Elektrische Voertuigen
www.proeftuin-ev.be
Electric Vehicles: a broad range

Testpopulation / Use cases

- Residential
- Companies: company or pool car
- Cities

193 families
> 100
Electric Vehicles: a broad range

1 H2

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<th>A330FC</th>
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<tbody>
<tr>
<td>H₂-voorraad</td>
<td>40kg in 8 tanks op 350 bar</td>
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<tr>
<td>Brandstofcel</td>
<td>150 kW</td>
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<tr>
<td>Batterij</td>
<td>60kW nom 100kW piek</td>
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<tr>
<td>Motorvermogen</td>
<td>2x85 kW</td>
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<tr>
<th>E-Truck Full Electric</th>
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<tr>
<td>Bereik</td>
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<tr>
<td>Bruto gewicht</td>
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<tr>
<td>Type</td>
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<tr>
<td>Asconfiguratie</td>
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<tr>
<td>Batterij energie inhoud</td>
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<tr>
<td>Motorvermogen</td>
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<td>Max snelheid</td>
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<td>Laden</td>
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<td>Laadtijd</td>
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Electric Vehicles: a broad range

- City of Bruges (2014)

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<td><strong>Type</strong></td>
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<tr>
<td><strong>Lengte</strong></td>
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<td><strong>Capaciteit</strong></td>
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<td><strong>Conductief</strong></td>
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<td><strong>Inductief</strong></td>
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<td><strong>Inhoud</strong></td>
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Battery State of Charge
Datamonitoring

CAN and/or GPS

privacy levels

surveys

move i-know

Tracking crowds, Respecting personal space
Datamonitoring

> 1.000.000 km

driving and charging behaviour

VITO data logging

- On board data logger
- GPS + CANbus
- GPRS
- Back-end at VITO
- Processed data to Volt Air / Powerdale server

Trip data

Fleet and Driver Care/GeoSolutions (Punch Powertrain/Triphase)

Laadsessies

Restore (interparking/Bechrged)
Charging infrastructure

157 locations

839 charging points for bikes and cars (349)
Charging infrastructure: 7 different brands and different operators and mobility providers
Charging infrastructure : Marketmodel

Source : eMI3
Charging infrastructure: Interoperability

Focus Group on European Electro-Mobility

Standardization for road vehicles and associated infrastructure

Report

in response to Commission Mandate M/468 concerning the charging of electric vehicles

NEW E-MOBILITY COORDINATION GROUP TO ADVISE CEN-CENELEC ON STANDARDISATION

On 23 March the kick-off meeting of the CEN-CENELEC eMobility Coordination Group (eM-CG) brought some 50 stakeholders together to discuss the work structure of this newly created joint coordination group. The eM-CG will advise the Technical Board of CEN and CENELEC on the ongoing European requirements relating to electric vehicle standardisation. In particular, it will maintain an overview of the implementation of the recommendations of the CEN-CENELEC eMobility Focus Group, and serve as a focal point for the implementation by CEN-CENELEC of Mandate M/468 “Standardisation mandate to CEN, CENELEC and ETSI concerning the charging of electric vehicles”.

ACEA position and recommendation: for the standardization of the charging of electrically chargeable vehicles

Brussels, 14 September 2011
Charging infrastructure : Interoperability
Open service platform for mobility services

From A to B? Networked & Shared
Open service platform for mobility services

OLYMPUS PLATFORM

Resources
- Resourcegroup X
  - E-Bikes
  - Chargepoints
  - Sites
  - Tokengroup X
    - Mifare1k chip id
    - Mifare 4k chip id
    - Barcode

- Resourcegroup Y
  - E-Cars
  - Accessgate
  - Parking lot
  - Tokengroup Y
    - Mobit chip id
    - Hitag chip id
    - Mifare desfire chip id

Products
- Agreement_PartnerA_PartnerB
- Agreement_PartnerC_PartnerB
- Agreement_PartnerA_PartnerC

Tokens

Events
- Authorization events
- Charging events
- Parking usage events
- Trip events
- EVSE BOS events

Products
- Settlement sheets
- Reports
- Event upload via Webservice or Email integration
- Resources/Tokens/Events via Webservice or Email integration
- Authentication webservice
- Whitelists

Partners
- PartnerA
- PartnerB
- PartnerC
Open service platform for mobility services

- Smart App “MoveFree” : end user = director of it’s own mobility
Projects

- Research projects making use of platform infrastructure, data, knowledge, ...

- Open innovation platform: also external companies (= users) can initiate projects

- Open for further collaboration e.g. within Horizon2020
International contacts

Dissemination
Lessons Learned
Projects
Standardisation

Handelsmissie Vlaanderen-Baden-Württemberg

International:
- Verankering/Bekendmaking
- Lessons learned uit het buitenland

Development of the European Framework for Electromobility
FP7 call TRANSPORT – 2010 TiREN -1
44 partners
Project Start: March 2011

Green eMotion

Scope
- ICT interfaces, application level protocols and standardized software services
- Initial focus on business objects like unique identifiers, data models, attribute lists and data structures
Presentation on Flemish Living Lab Electric Vehicles (Programme Office, Carlo Mol)

Identification of EV use patterns, based on large scale EV monitoring data (VUB - De Cauwer C.)

Living Lab Electric vehicles Flanders (Belgium): The influence of testing an EV on the general appreciation of electric mobility (VUB - Heyvaert S.)

Multi-actor business model analysis of uncoordinated electric vehicle charging compared to local load management, (VITO, Annelies Delnooz)

Volt-Air: Where energy meets mobility (VITO, Tobias Denys)

Booth E526: Triphase & E-trucks Europe (EV TecLab platform)
Green eMotion External Stakeholder Forum, Fira, Barcelona, November 21st, 2013

The Green eMotion Project (GeM) is the largest EC funded electric vehicle project with 45 partners from 10 demonstration regions across Europe. If you would like to get a better understanding of the work being done to create a framework for electromobility in Europe, then the 7th Green eMotion External Stakeholder Forum is the event to attend and will take place on the 21st of November 2013 at Fira, Gran Via, Barcelona. The draft agenda is outlined below and includes a wide range of topics on electromobility from the project as well as from external stakeholders. Topics include: The GeM Marketplace, Roaming, Standards, Smart Grids and Real Life Data from EVs. To register for the event click on the link below:

http://www.curelectric.org/events/2013/green-motion-external-stakeholder-forum/

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Speaker(s)</th>
<th>Company/Institution</th>
</tr>
</thead>
<tbody>
<tr>
<td>08:30 - 09:00</td>
<td>Coffee &amp; Registration</td>
<td></td>
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<tr>
<td>09:00 - 09:10</td>
<td>Welcome &amp; opening of the conference</td>
<td>Dr. Heike Barlag</td>
<td>Siemens</td>
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<tr>
<td>09:10 - 09:20</td>
<td>Welcome from Barcelona City</td>
<td>Ramon Pruneda</td>
<td>Barcelona City Council</td>
</tr>
<tr>
<td>09:20 - 09:35</td>
<td>Words from the co-chair</td>
<td>Carlo Moi</td>
<td>Flemish Living Labs</td>
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<tr>
<td>09:35 - 09:55</td>
<td>Green eMotion status update</td>
<td>Dr. Heike Barlag</td>
<td>Siemens</td>
</tr>
<tr>
<td>09:55 - 10:15</td>
<td>Towards a Connected (EV) World: The Green eMotion Marketplace connecting European Demo Regions for seamless (electro) mobility</td>
<td>Volker Fricke</td>
<td>IBM</td>
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<tr>
<td>10:15 - 10:30</td>
<td>First experience of roaming between Green eMotion demo regions</td>
<td>TBC</td>
<td>TBC</td>
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<tr>
<td>10:30 - 11:00</td>
<td>Coffee &amp; Networking</td>
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<tr>
<td>11:00 - 11:15</td>
<td>The Links Between eMobility and Storage Batteries - Policies and applications for the overall energy storage picture.</td>
<td>Alfons Westgeest</td>
<td>Eurobat</td>
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Green eMotion External Stakeholder Forum

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<thead>
<tr>
<th>Time</th>
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<th>Company</th>
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<tbody>
<tr>
<td>11:15 - 11:30</td>
<td>Connecting electric vehicle infrastructure, a communications perspective</td>
<td>Mark Rose</td>
<td>Vodafone</td>
</tr>
<tr>
<td>11:30 - 11:55</td>
<td>Real-life data on the use of Plug-in Hybrid Electric Vehicles from Green eMotion and external demonstration regions</td>
<td>Cristina Corchero &amp; Speaker TBC</td>
<td>IREC &amp; TDC</td>
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<tr>
<td>12:10 - 12:25</td>
<td>Interchange – International interoperable charging</td>
<td>Thomas Dalber</td>
<td>Hubject</td>
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<tr>
<td>12:25 - 12:40</td>
<td>Standards for electromobility: an update</td>
<td>Silvio Weeren</td>
<td>IBM</td>
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<tr>
<td>12:40 - 13:55</td>
<td>Lunch &amp; Networking</td>
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<td>Session: Smart Grid Integration and Load Management</td>
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<td>13:55 - 14:20</td>
<td>Smart grid functionalities as a facilitator to mass market adoption of EVs</td>
<td>Enrique Monjo</td>
<td>Iberdrola</td>
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<td>14:20 - 14:45</td>
<td>Trialling intelligent grid rearrangement in Ireland</td>
<td>Senan McGrath</td>
<td>ESB</td>
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<td>14:45 - 15:10</td>
<td>Controlling EV charging based on grid demands</td>
<td>TBC</td>
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<td>15:10 - 15:40</td>
<td>Coffee and Networking</td>
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<td>15:40 - 15:55</td>
<td>Barcelona-Malaga - Local impact of high level EV penetration and Fast Charging and using second life battery to support the grid</td>
<td>Narcis Vidal</td>
<td>Endesa</td>
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<tr>
<td>15:55 - 16:10</td>
<td>Core: Green eMotion values as a foundation of seamless electromobility</td>
<td>Norbert Viertelg</td>
<td>Siemens</td>
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<tr>
<td>16:10 - 16:20</td>
<td>Closing Remarks</td>
<td>Dr. Heike Barlag</td>
<td>Siemens</td>
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E-mobility innovations : from lab to real-life!

Carlo Mol

Programme Office - Boeretang 200 - 2400 Mol - Belgium
P: +32 14 33 58 85 - M: +32 492 58 61 24
carlo.mol@livinglab-ev.be - www.livinglab-ev.be