7th Framework Programme

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P2 - Public summary report

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Editor(s)	Andras Kovacs (BroadBit)		
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OBJECTIVES

Mobility2.0 will develop and test an in-vehicle commuting assistant for FEV mobility, resulting in more reliable and energy-efficient electro-mobility. In order to achieve a maximum impact, Mobility2.0 takes an integrated approach of addressing the main bottlenecks of urban FEV mobility: 'range anxiety' related to the limited FEV range, scarcity of parking spaces with public recharging spots, and the congestion of urban roads. Our integrated approach means the application developed by Mobility2.0 will utilise co-operative systems to simultaneously consider these bottlenecks, so that such an optimisation can be achieved which still guarantees reliable transportation for each FEV owner. Mobility2.0 will focus on assisting the daily urban commute, which represents the bulk of urban mobility.

In this context, the FEV-specific guidance aspect includes the integrated reservation of a suitable FEV recharging spot, while also prioritising FEVs with low battery levels for the reservation, and making optimal use of the available public transportation along the journey. While the at least partial modal shift will result in very significant energy savings - in direct proportion to the reduced driving mileage - it can be achieved seamlessly only via an integrated co-operative process, which enables efficiency gains without sacrificing the FEV driver's comfort. The project will focus on the specification and standardisation of the messaging interface for the co-operative commuting assistant, such as the reservation of EV recharging spots, and shall validate this co-operative application end-to-end at two test sites.

The 'Mobility2.0' proposal name is meant to express that the co-operative electromobility technology targeted by this project is a next level concept for personal mobility.

THE MAIN FOCUS

By focusing on the development of co-operative commuting assistant for FEVs, Mobility2.0 will provide the FEV users and municipalities with the following results:

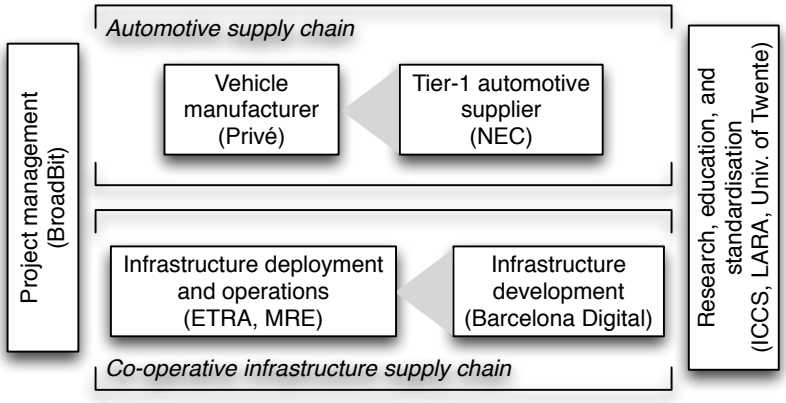
- **Optimize overall commute time**
- **Intelligently manage priorities at public recharging spots**
- **Facilitate traffic peak mitigation through dynamic electricity pricing**
- **Support the complementary use of FEVs and public transportation**

THE PROJECT CONSORTIUM AND WORK PLAN

Project duration: September 1, 2012 - February 28, 2015.

The following figures show the project consortium according to the role of partners and by business domain. The Mobility2.0 partners cover the essential parts of the supply chain on both FEV side and co-operative infrastructure side.

Participant no.	Participant organisation name	Participant short name	Role
1 (Coordinator)	BroadBit Slovakia	BB	Coordinator
2	ETRA	ETRA	Infrastructure supplier
3	Fundació Privada Barcelona Digital Centre Tecnològic	BD	Transportation management SW supplier
4	ICCS	ICCS	Research institute
5	Municipality of Reggio-Emilia	MRE	Municipality
6	LaRA Joint Research Unit / Armines	ARM	Research institute
7	University of Twente	UT	Research institute
8	Privé	PR	Vehicle manufacturer
9	NEC Europe Ltd	NEC	Automotive supplier



The planned project work involves 294 person-months of total project effort. The work begins with collecting Use cases and requirements, and then proceeds to specifications and prototyping. The final phases of the project involve system integration of prototyped components with existing EV recharging infrastructure at the test sites and public transportation databases, as well as extensive validation at the test sites.

POTENTIAL IMPACTS

The system-optimised assignment of public re-charging spots extends the FEV range - in comparison to driving round-trip without re-charging - and this extension is prioritised for those FEVs which need it most. Through the use of co-operative communications it shall be possible to inform in a scalable way the real-time updates of the re-charging spot

availability and assignments. The time-of-day based dynamic electricity pricing further improves FEV energy efficiency by mitigating traffic congestions.

Furthermore, the seamless multi-modal FEV commuting assistance shall establish an easy to use complement between private FEV driving and public transportation usage.

KEY RESULTS AFTER THE SECOND YEAR

The main achieved results after the second project year include the following:

- The smartphone-based commuting assistant application has been developed - along with its corresponding server-side component - for the ergonomic and seamless assistance of EV commuting
- Development of city-wise optimised algorithms for EV re-charging spot assignments
- Integration of the prototyped Mobility2.0 system with existing transport infrastructures at the Barcelona and Reggio Emilia test sites

THE MAIN EXPECTED RESULTS IN THE FINAL 6 MONTHS

The main expected results for the last 6 months include the following:

- Assessment and validation of the integrated Mobility2.0 results through driving tests by external EV drivers.
- Publication of the standardised EV re-charging spot reservation protocol, which has been specified by Mobility2.0, through active involvement in the ETSI ITS group
- Arrangement of a final demonstration day for showcasing the integrated Mobility2.0 system at the Barcelona test site.

DISSEMINATION ACTIVITIES

The following table shows the dissemination activities where Mobility2.0 project presentation has been made up to date:

Year	Date	Event	Location
2012	July 11-12	3rd "European Green Cars Initiative" Projects Clustering Event	Brussels, Belgium
2012	September 29	"European week of Mobility"	Reggio Emilia, Italy

2013	April 10	ETSI ITS WG1 meeting (presentation of T3.5 interim results)	Sophia Antipolis, France
2013	June 6	Second Joint Ercim Emobility And Mobisense Workshop / Invited Presentation: Geert Heijenk (University of Twente) - *Mobility2.0: Co-operative ITS Systems for Enhanced Electric Vehicle Mobility*	St Petersburg, Russia
2013	September 20	Clustering workshop for information exchange with the eco-FEV and MobinCity projects	Brussels, Belgium
2013	October 15-16	ECARTEC exhibition	Munich, Germany
2013	November 6-8	ICT-2013 Exhibition and Conference / Mobility2.0 booth	Vilnius, Lithuania
2013	November 17-20	EVS27 Conference / Mobility2.0 presentation	Barcelona, Spain

The planned main dissemination activities for the last 6 months involve the final public demonstration of the project results in February, 2015, and a presentation at the 2014 EEVC conference in Brussels.

The public project deliverables have been also published on the project website, which is found at mobility2.eu.