

Mobility Change: Combining Services More Easily

Partners of Science and Industry Develop an Evaluation System for the Introduction of Electric Mobility in Various Fields of Application – Goals: More Cooperation and Fleet Optimization



How to combine car sharing with public passenger transport? This is in the focus of the "BiE" joint project. (Photo: RAC)

Our mobility behavior is changing: Attractive public passenger transport services or flexible services, such as car sharing, are gaining importance. The project "BiE – Bewertung integrierter Elektromobilität" (evaluation of integrated electric mobility) focuses on how such services can be coordinated better and integrated into the everyday life of users. BiE is funded by the Federal Ministry of Education and Research (BMBF) under the federal program "Electric Mobility". BiE is part of the "Cluster Electric Mobility South-West". The joint project, in which scientists of Karlsruhe Institute of Technology (KIT) are involved, is coordinated by cantamen GmbH.

Seamless integration of electric mobility into everyday life is in the focus of the BiE project in which partners of science and industry cooperate. The prognosis models developed under the project are to improve the range and planning of the use of fleet vehicles.

The partners will design a booking system meeting specific requirements of electric mobility. Via this system, customers of a car shar-



*KIT Mobility Systems Center:
Solutions for tomorrow's mobility*

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ing company will be provided with an electric vehicle that is optimally charged for their purposes.

In addition, the scientists are working on an interaction model, by means of which users are to combine various services. Cooperation of various service providers, such as car sharing companies, the public passenger transport system or enterprises, is to be supported.

An integrated electric mobility assistance system will support individuals and service providers in using electric mobility. The planning of demand will be facilitated. The distances that might be covered ideally with an electric vehicle will be displayed to the clients on their smartphones. In addition, the assistance system is to identify mobility needs in everyday life, such as a drive to the supermarket. Then, the vehicle will be prepared accordingly.

Similar to a vote match system, an advising system shall be achieved later on. By the input of various parameters, such as size of organization (e.g. communities or municipalities), number of persons, and mobility behavior, reliable statements shall be output as to whether and under which conditions electric mobility is reasonable. Individually tailored mobility architecture recommendations will be made for the organization described. The required investments, infrastructures, utilization, and economic efficiency of e-mobility solutions are to be prognosticated for nearly any environment.

The paramount project goal is to design an evaluation system for the integration of electric mobility into everyday life. Based on characteristics, concrete calculations shall be made regarding the use of electric mobility in various areas. Prior to implementation, potential use scenarios will be simulated. In this way, appropriate charge infrastructures for vehicle fleets can be identified, cooperation options of various service providers can be determined, and traffic flows will be analyzed. The BiE project focuses on concepts for the seamless cooperation of various mobility service providers as well as on the optimized planning of larger, electrically driven car sharing fleets. New offers and suitable potentials for vehicle fleets will be studied in the regions of Stuttgart, Rhein-Neckar, and Karlsruhe.

The BiE project will be funded by the BMBF with more than EUR 2 million for a period of 2 ½ years in the second funding phase of the Cluster Electric Mobility South-West. The project will be based on the work performed in the first funding phase already. Considering previous findings, the new research project will study and assess the effects of mobility change on mobility services.

Highly Committed Partners

Eleven partners of various branches participate in BiE: The FZI Research Center for Information Technology and Karlsruhe Institute of Technology (KIT) with the Institute for Transport Studies (IfV) and the Institute of Product Engineering (IPEK) contribute latest scientific findings. The industry partners are Bosch, cantamen GmbH, esentri AG, RA Consulting GmbH, Raumobil GmbH, and TWT GmbH Science and Innovation. The two car sharing service providers Stadtmobil Karlsruhe and Stadtmobil Rhein-Neckar are regional pilot partners for the tests.

Cluster Electric Mobility South-West

With about 80 actors of industry and science, the Cluster Electric Mobility South-West is one of the most important regional associations in the area of electric mobility. The cluster managed by the State Agency e-mobil BW GmbH is aimed at advancing industrialization of electric mobility in Germany and making Baden-Württemberg a major provider of electric mobility solutions. The Leading-edge Cluster is funded by the BMBF with EUR 40 million for a period of five years under the High-tech Strategy of the federal government. By funding leading-edge clusters, regional potentials shall be pooled along the complete chain of innovations and values added. Under the heading of “road to global market”, the cluster uses the unique opportunities of the region of Karlsruhe – Mannheim – Stuttgart – Ulm for the networking of renowned large, medium-sized, and small enterprises in the sectors of automotive technology, energy technology, information and communication technologies with the production technology sector and local research institutes.

The Mobility Systems Center pools KIT activities relating to vehicle technology. Presently, 40 KIT institutes with about 800 employees are working on methodological and technical fundamentals for tomorrow’s vehicles. It is their objective to develop concepts, technologies, methods, and processes for future mobility considering the complex interactions of vehicle, driver, traffic, infrastructure, and society.

Karlsruhe Institute of Technology (KIT) is a public corporation pursuing the tasks of a state university of Baden-Württemberg and of a national research center of the Helmholtz Association. The KIT mission combines the three strategic lines of activity of research, higher education, and innovation. With about 9,400 employees and 24,500 students, KIT is one of the big institu-

tions of research and higher education in natural sciences and engineering in Europe.

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