

**Know-Center | Know-Center GmbH –
Research Center for Data-Driven Business &
Big Data Analytics**

Programm: COMET – Competence Centers for
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**Competence Centers for
Excellent Technologies**

E-MOBILITY AND BIG DATA - OPTIMIZED DATA UTILIZATION OF CHARGING OPERATIONS

IN A JOINT RESEARCH PROJECT, KNOW CENTER AND HAS·TO·BE GMBH ARE WORKING ON THE UTILIZATION OF DATA GENERATED DURING CHARGING OPERATIONS. THE ACHIEVED "INSIGHTS" DELIVER A VALUABLE CONTRIBUTION TO NEW FEATURES AND SERVICES OF THE HAS·TO·BE E-MOBILITY SOLUTIONS.

Naturally, large amounts of data accumulate during the operation of charging stations. Together with the COMET Center Know-Center, has-to-be gmbh, Europe's leading full service provider for e-mobility, have worked on the best possible use of this data. A multitude of data, collected during construction, during operation (daily more than 3,500 downloads) and the maintenance of charging stations were researched with state-of-the-art data analytics and visualization methods, and prepared for the solution of certain defined use cases.

One goal of the joint research projects was, among other things, to provide a forecast of future energy consumption based on the historical consumption data. This enables a cost-optimized energy supply for operators of charging stations.

Furthermore, the data were examined with regard to "predictive maintenance". On the one hand, the goal was to achieve better error identification and, on the other hand, to optimize the availability of charging stations.

SUCCESS STORY



Figure 1: Data visualization of energy consumption data in the course of the exploration phase (Copyright Know-Center GmbH)

In addition, the data provided were investigated with regard to the identification and validation of relevant factors influencing the location quality of charging stations. These results serve as the basis for site optimization for future expansion of the charging infrastructure.

Beyond the use cases for the data-based support of charging station operators, potential benefits for the end user (e-car owners) were also examined. On the one hand, prediction information regarding the availability of charging stations was determined in order to improve travel and route planning. On the

other hand, solution variants were found for the early detection of fraud attempts with RFID charging cards.

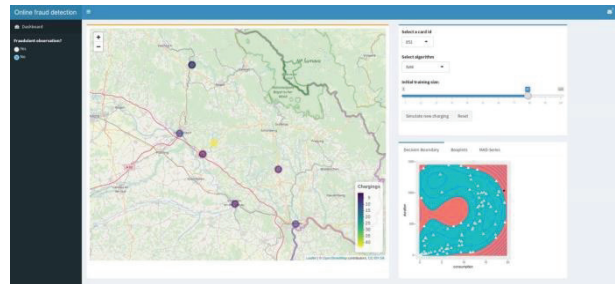


Figure 2: Demonstrator for Fraud Detection of RFID Charge Cards (Copyright Know-Center GmbH)

Impact and effects

The findings and results gained during the project were either immediately used to improve the has-to-be e-mobility solutions or are used as a basis for new functions and services.

The results of the joint research were presented at the BITKOM Big Data Summit 2018 in Hanau and in the course of a scientific publication at the ISPIM (International Society for Professional Innovation Management) Conference 2018 in Stockholm.

Project coordination

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This success story was provided by the consortium leader/centre management and by the mentioned project partners for the purpose of being published on the FFG website. Further information on COMET: www.ffg.at/comet