Technische Universität München

IAS TUM Institute for Advanced Study

Supervision, management and visualization of the charging process for electrical vehicles in the scope of the Innotruck Project

Cooperation of International Graduate School for Science and Engineering, TUM-Institute for Advanced Study and Siemens AG

1 General data

Type: BA, SA, MA
Supervisor: Prof. Dr.-Ing. Alois Knoll
Advisor: Ljubo Mercep, M.Comp.Sc.
Research area: Automotive, Embedded programming, GUI Programming
Programming language: C / C++
Required skills: C / C++ / Network programming / Linux
**Language:** English or German

2 General overview of the project Innotruck

Worldwide activities in the field of electric powered personal vehicles are in constant state of growth. However, the complex interconnect between the vehicle, the infrastructure and user behavior are only marginally taken into account. Due to the considerably higher energy consumption and CO_2 output inherent to goods transport vehicles, these factors have to be thoroughly considered and dealt with accordingly.

The goal of our project is to implement a holistic approach to electromobility, with an emphasis on the goods transport. Focus is being placed onto three research areas:

· System architecture
· Drive train and energy management
· Human-machine interface

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The experimental vehicle platform was provided by the project leader Prof. Dr. Gernot Spiegelberg, a senior research fellow at the Institute for Advanced Studies of the Technical University of Munich.
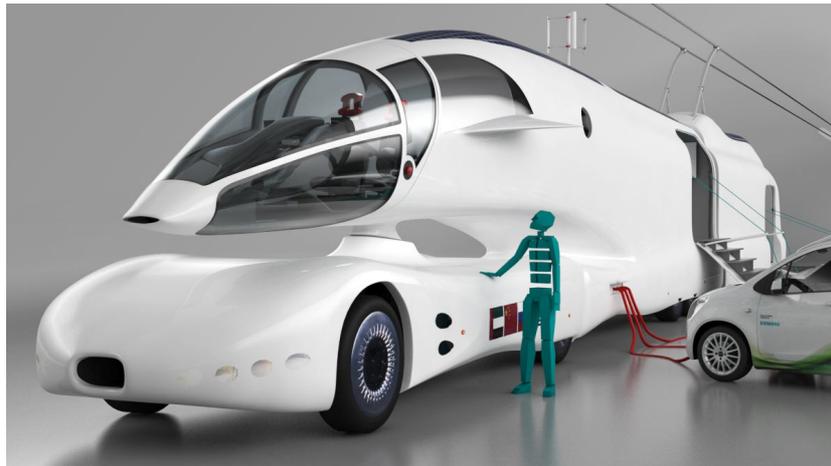
3   Task description

Designing a Linux application with Ethernet interface to the Innotruck charging stations using C/C++/QT Library. The application controls and monitors the charging station with connected external vehicles, while visualizing the current energy flow.

The goal is to create a QT GUI application running on the central Innotruck computer, providing easy access and graphical representation of all the data relevant to the charging process. Up to 8 vehicles can be connected to the truck's two charging stations, so this process has to be thoroughly monitored and logged. This includes storing the individual consumption of every vehicle in a way that the data can be called upon by external personal mobile devices and other vehicle subsystems.

For more information or for applications contact Ljubo Mercep (ljubo.mercep@tum.de) .

For more information on the Innotruck project please visit: http://www.innotruck.de