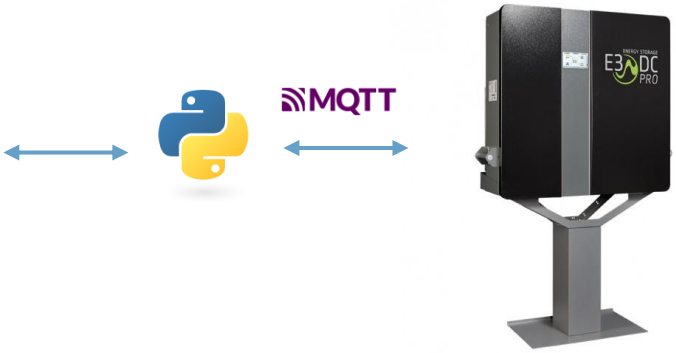
Lehrstuhl für Elektrische Energiespeichertechnik
School of Engineering and Design
Technische Universität München

– FP –

IoT-platform for battery energy storage systems



Background

The CoSES micro grid laboratory was designed to explore and develop solutions for smart energy systems and sector coupling. To experiment with decentralized energy resources, the lab is equipped with two commercial battery home storage systems. An internet connection can be established with the storage systems to retrieve information such as the state-of-charge, and current, voltages and temperature measurements, and concede control on the charge and discharge power. This interface, however, has so far been only partially implemented.

The goal of this project is to establish a communication link between the battery home-storage systems and the lab, and to incorporate these into the CoSES IoT ecosystem.

Tasks

- Implement a Python/MQTT interface to the storage system EMS.
- Create a database to log operational time-series data.
- Perform some test experiments.

Requirements

- Solid IT skills.
- Very good Python knowledge.
- Experience with IoT technologies like MQTT is of advantage.
- Motivated and independent work.

Fields

☐ Cell characterization
☒ Experiments
☐ Hardware development
☒ Software development
☐ Modeling
☐ Optimization
☐ Simulation
☐ Literature research

Program

☒ Electrical Eng.
☒ Mechanical Eng.
☒ Computer science
☐ Physics
☐ Mathematics
☐ Chemical Eng.
☐ Industrial Engineering

Start

As of now

Contact

Martin Cornejo
martin.cornejo@tum.de
http://www.ees.ei.tum.de