Institut für
Automatisierungstechnik

Master/Bachelor Project/Thesis

Python-based Tool to Convert Built PowerFactory Grid into Pandapower Grid

Introduction: Powerfactory (DIgSILent) is specialized software for power system analysis that offers most functions to analyse and study power systems. The main feature is that it offer GUI (Graphical User Interface) to build an electrical network efficiently. Unfortunately, this software is a commercial software, therefor, has restrictions. It offers a unique programming language for automation task and an unique programming language for defining the dynamic models.

Python is a free and open source software for all users, which offers good packages for power system analysis e.g. pandapower and pypower. A python interface with Powerfactory (DIgSILent) is available within DIgSILent that can be used to interchange data within these two environments. Furthermore, within Python different mathematical models can used to improve grid conditions.

Tasks: Through this master project/thesis/bachelor thesis it is desired to interface DIgSILent with Python, extract the electrical network information from DIgSILent and build the network in pandapower environment:

- Literature on network elements, python, pandapwer and DIgSILent
- Developing a python based tool to extract information from DIgSILent
- Developing a tool to build an electrical network based on the extracted data
- Validating the tools
- *Literature review on network reduction techniques
- *Developing a model of network reduction technique
- *Validating the model

Requirements:

- *Electrical power engineering background
- *Interest in power managements/system
- Interest in simulation tools, modelling and programming
- Knowledge of power system simulation software and a programming language

* If the project is registered or extended as a master thesis

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