Student project proposal

Project title  Software for automatic detection of power system events

Project type  ☒ MSc thesis  ☐ BA semester project  ☒ MSc semester project

Project responsible and e-mail
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Project description
The student is asked to design and implement a software layer able to detect and discriminate among possible power system events (e.g., high/low frequency, voltage sags, current inrush). The software will be integrated in an already existing device. The device is sampling input waveforms (e.g., voltage and current) and performing a DFT (Discrete Fourier Transform) on the acquired samples. The developed detection layer might act on the raw samples or on the outputs of the DFT in order to detect the events. The final goal of the project is to validate the design and its implementation against some user-generated power system events.

Tasks of the student
- Design a method to detect events based on raw acquired samples or DFT outputs (main)
- Implementation in an existing real device
- Validation and testing (optional)

Requirements
- The design and early assessment of the performance of the method can be done with any software (e.g., MATLAB)
- The final implementation will be in LabVIEW. Although not required, a minimum knowledge of this software is recommended.