École Polytechnique Fédérale de Lausanne
Distributed Electrical Systems Laboratory
EPFL-STI-DESL-ELL, Station 11, CH-1015 Lausanne

http://desl-pwrs.epfl.ch

Student project proposal

Project title
Development of a COMTRADE library

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

Project responsible and e-mail
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Project description

The purpose of this internship project is to develop a COMTRADE (Common Format for Transient Data Exchange) library for disturbance recording in electrical power systems. COMTRADE is a widely adopted standard for storing and exchanging fault and disturbance data from power systems and is critical in the analysis, simulation, and troubleshooting of electrical network events.

This project aims to create or embed a versatile and robust software library that can read, write, and manipulate COMTRADE files, enabling power engineers and analysts to seamlessly work with disturbance data. The COMTRADE library shall support the latest COMTRADE formats, including ASCII and binary data storage, and provide a comprehensive API that can be easily integrated into various software applications used in the analysis of power system disturbances.

During this project the intern will gain hands-on experience in software development, data management, and power systems engineering, as well as an understanding of the importance of data standards in the energy sector.

Tasks of the student

- COMTRADE Standard analysis
- Library implementation
- Library testing and validation
- Library documentation

Requirements

- Good proficiency in at least one of the following programming languages: C, C++, LabVIEW, Python
- Strong analytical skills to identify and resolve issues in data interpretation and file handling
- Ability to break down complex problems into smaller, manageable tasks and develop solutions