

Internship

Technical modelling within load-flow software – Transition to CGMES format

Are you looking for an internship for at least 10 weeks? We are giving you the chance to put your theoretical knowledge into practice.

1. Description

As an intern at the Development Department, you will work on practical and sustainable projects which overcome strategic challenges of Coreso SA.

The intern will also enjoy an international experience while developing professional skills with concrete tasks. This internship will allow the student to bring their classroom knowledge into a professional work setting and broaden their knowledge through hands-on application in a professional environment.

Your tasks will include:

- Describe physics of main network related elements: PST, HVDC, tap changer, etc...
- Describe the modelling of these components in CIM
- Challenge the correct behaviour of Coreso load-flow software Convergence on these elements:
 - Correctness of data imported and exported
 - Reviewing how CGMES objects are translated and threatred inside Convergence
 - Assessment of the load-flow behaviour on these components (e.g. correctness of voltage regulation).To do this, dedicated test use cases shall be created and applied.
- Create suggestions to improve the implementation of CIM related equipment in Convergence where needed
- Support the transition towards CGMES in Coreso, by making reference documentation

Send your CV and application form to contact@coreso.eu.

2. Context

The CIM (Common Information Model) is a xml-based standard which will be used in the near future by TSO and RSC to exchange data.

The purpose is an efficient information exchange to ensure electricity grids operating smartly and cost-efficiently; and to exchange the necessary data for regional or pan-European grid (development) studies.

More specifically the CGMES (Common Grid Model Exchange Specification) reflects TSO requirements for accurate modelling of the ENTSO-E area for power flow, short circuit, and dynamics applications.

This includes:

- power system equipment information
- topology information
- information on power system state variables (the results from the load flow simulation of the system)
- steady state hypothesis information (information on load and generation values as well as other input parameters necessary to perform load flow simulations.)

Coreso, as Regional Security Coordinator and as merging entity creates a common grid model based on the individual inputs from TSO's.

Seamless transition towards CGMES is crucial for Coreso.

3. Prerequisites

The ideal candidate is an Electrical or Electro-mechanical engineering student at Master degree level (4th or 5th year of studies). We are looking for somebody detail oriented, organized and creative and who possesses a professional work ethic and is enthusiastic to gain new knowledge.

Skills and competences:

- Knowledge of the electricity sector
- Knowledge of electricity fundamentals
- Ability to present complex technical subjects very clearly
- Experience with load-flow software is an advantage
- Language: Very good command of English is a must

4. Conditions

The intern will enjoy an international experience while developing professional skills with concrete tasks.

This internship will allow the student to bring their classroom knowledge into a professional work setting and broaden their knowledge through hands-on application in a non-profit environment.

- Reimbursement of travel costs or rental charges if you come from abroad.
- Hands-on experience to build portfolio and professional contacts.
- School credit, depending on the requirements.

5. About Coreso

The mission of Coreso is to proactively support Transmission System Operators to ensure Security of Electricity Supply in Europe. Located in Brussels, about fifty engineers, seconded from their companies, combine their expertise 24 hours a day, 7 days a week to anticipate the operation both in the short term and the long term, from a year ahead until Intraday (few hours before real time)

Founded in 2008, Coreso encompasses nine European operators, which are also its shareholders (Elia in Belgium, Eirgrid in Ireland, 50hertz in Germany, National Grid in the UK, REE in Spain, REN in Portugal, RTE in France, SONI in Northern Ireland, Terna in Italy).

Within the European context of progressing market mechanisms, continuous growth of renewable energy, ambitious grid development and further harmonization, new coordination challenges are numerous. Coreso aims to build up, together with all partners, the adequate coordinated operational processes to cope with these game changers. To secure operation of the European electricity system represents a truly international challenge.