Internship and Thesis Projects at Tractebel

THESIS

Comparative Analysis of Two Discrete Event Simulation Software Packages

Modeling – Logistic

Business line: Nuclear - Radioactivity Management

Type: Master Thesis

Site: Brussels Engie Tower, homeworking possible

Who is Tractebel?

Tractebel, part of the Engie group, has over 150 years of experience and is one of the world's largest engineering company. Tractebel offers its customers multidisciplinary solutions in the fields of energy, nuclear, hydraulic and infrastructure. Our teams are involved in all phases of a project, from feasibility studies to implementation.

What will you be working on?

The design of a waste treatment unit for the dismantling of a nuclear power plant is a complex and challenging task. The goal of the waste treatment unit is to process and recycle waste streams so as to minimize both the volume and radioactivity of effluent wherever practical. The waste generated during the dismantling of a nuclear power plant is sorted, treated, and packaged before being transported for temporary storage. The waste must be processed to make it safe for disposal. This includes its collection and sorting; reducing its volume and changing its chemical and physical composition, such as concentrating liquid waste; and finally, its conditioning so it is immobilized and packaged before storage and disposal. In order to design this Treatment unit (number of workshops, storage capacity...), it is essential to know and understand what the logistic needs will be this is why the discrete event simulation model is developed.

Description of the work

In this internship, you will compare the features, performance, and usability of AutoMod® and another software package for discrete event simulation. You will start by researching the available software packages and selecting one that is widely used in the industry and is comparable to AutoMod.

Next, you will develop a set of criteria to evaluate the software packages, such as the number of events that can be simulated, the accuracy of the simulation results, and the ease of use of the software.

Then, you will design and execute a series of experiments to test the software packages against the criteria you have developed. You will also develop a set of test cases to ensure that the software packages are tested under a variety of conditions.

Finally, you will analyze the results of your experiments and present your findings in a report. Your report will include a detailed comparison of the two software packages, including their strengths and weaknesses, and recommendations for which package to use in different scenarios.

What profile are we looking for?

- You speak fluently Dutch, French or English.
- You are studying Applied Physics Engineering or Physics.
- You wish to do a master thesis in a large enterprise.
- Knowledge of programming is must.
- You are driven by the search of innovative solutions.
- You are curious and have an initiative mindset.

What do we offer?

- An interesting and varied thesis in a large nuclear engineering company.
- An environment that allows you to strengthen your technical skills.

- The opportunity to receive professional guidance by experts in different fields of engineering.

How to apply?

Do you think that Tractebel is the perfect fit for your internship?

Send us an e-mail to STEVEN.PEETERMANS@TRACTEBEL.ENGIE.COM and ROBIN.THOMAS1@TRACTEBEL.ENGIE.COM with your CV and a few lines of motivation.

We hope to see you soon!