

Master Thesis Proposal: 3D Factory commissioning

Title

Background

Virtual Commissioning is the final step in the production preparation before ramping up the real production system in a factory. There are very few actors using this today. That is because the prerequisites are demanding. All physical and logical entities must be modelled in order to mimic the real behaviours of the factory. There is however a shift in industry to engage in Virtual Commissioning now. Example companies are Volvo, Scania, Ericsson and Airbus. They must simulate the factory in a virtual model (digital twin) to avoid the delays always occurring during physical commissioning.

The Gothenburg company Prodtex is partnering with CHALMERS on Virtual Commissioning. They are delivering software and expertise in Virtual Commissioning to the mentioned end users (OEMs). Prodtex is currently building knowledge in this area and could use your help.

This project will test the limits of what Virtual Commissioning can provide. You will work together with Prodtex to make a breakdown of use-cases in their ongoing RFQs. Prodtex uses ControlBuild to develop the gateway to virtual PLCs and HMIs. And they use 3DExperience for the factory 3D and process simulation.

Some basic programming skills can be useful, but no expert knowledge required. The Factory model and system will be provided. Your scope will be on the simulation and system integration between 3DExperience, ControlBuild and Siemens PLC Sim.

Links

[3DExperience Robotics](#)

[ControlBuild to control robots in 3DExperience](#)

Special Requirements: Some programming

Student Background: Thesis project will be examined at IMS

Number of students: 1-2

Duration: Starting ASAP, 20 weeks

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