

Master Thesis -

“Control system design for a low bypass aircraft engine in Matlab/Simulink”

(30 credits/20 weeks – 1 to 2 students)

About us

GKN Aerospace is the world’s leading multi-technology tier 1 aerospace supplier. With 55 manufacturing locations in 15 countries, we serve over 90% of the world’s aircraft and engine manufacturers. We design and manufacture innovative smart aerospace systems and components. Our technologies are used in aircraft ranging from the most used civil aircraft to the world’s advanced 5th generation fighter aircraft and the Ariane orbital rockets used by ESA.

Project Background

The Control System department at GKN have started to use Matlab/Simulink as primary design and simulation tool package and would like to invite a Master’s student to evaluate these design tools. Both single or multivariable control approaches are possible.

Existing Simulink models of a low bypass engine with a complete control system model can be used as a baseline. The picture below is a commercial high bypass engine.

Previous master’s and PhD projects at GKN include multivariable and fault tolerant robust H_{∞} -controllers for low bypass engines. Multi-variable control system models and designs exists in the discontinued simulation and analysis tool MATRIXx Systembuild, still accessible.

Assignment Description

Description of the assignment content.

- Develop a closed loop control design approach for a low bypass engine in Matlab/Simulink for a limited operating range or a linear controller for just a single operating point.
- Project milestones: Literature survey, familiarization with Matlab/Simulink, Design controller(s) and build simulation models, document and report.

Qualifications

- Master’s student, preferably from the master’s programme Systems, control and mechatronics.
- Fluent in both Swedish and English.

Apply by

Send your resume and cover letter to:

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Interviews will be held continuously.

