

Master Thesis - “Best practice – TRS LCF analysis chain incorporated into Ansys Workbench” (30 credits/20 weeks – 1 student)

Project Background

GKN Aerospace designs and produces parts for commercial aircraft engines. We are responsible for requirement fulfillment of the parts we design. The analysis department perform structural and thermal analyses to evaluate the design. One of the components we design and manufacture is the Turbine Rear Structure (TRS).

Low Cycle Fatigue life of the TRS is evaluated using sub-models on different critical parts of the TRS. The sub-model LCF stresses are calculated by mapping displacements and temperatures from the global 360 degree analysis onto the Finite Element sub-models. This has up to now been done by running a series of ANSYS Classic APDL scripts.

Assignment Description

The assignment is to incorporate the LCF analysis chain into ANSYS Workbench. The goal is that any sub part of the TRS could be input as CAD geometry and meshing, mapping and analysis would be done automatically to achieve the LCF stresses. Furthermore, the actual LCF life analysis, based on the LCF stresses, can be included.

Qualifications

Student in the final year of their M.Sc. in Mechanical Engineering with an interest in FE-analysis and programming.

Completed course(s) in theory and application of Finite Element Methods.

Apply by

Send your resume and cover letter to Per Bryntheson (per.bryntheson@gknaerospace.com) and Björn Månsson (bjorn.mansson@gknaerospace.com)

Interviews will be held continuously.