

Master thesis
30 credits/20 weeks
1-2 student

Circular indicators for decision-making in aerospace product development

> Project Background

Sustainability is a growing concern for the aerospace industry today, like in the whole world. In the aero-engines business, special metal alloys are used that often require usage of critical minerals and conflicts elements coming from all over the world. Circular economy is a necessity not only to reduce climate change, but also to limit mineral depletion, pollution and poor working conditions across the globe. Additive manufacturing are manufacturing technologies that can reduce the amount of scrap in the production line, increase the degree of freedom in design and has many more potential sustainability-related benefits. Additive manufacturing is increasingly considered when developing new products in aerospace, but circularity benefits and drawbacks are not yet well understood. They are especially difficult to address in early product development stages when a design, manufacturing method and supplier have not yet been selected.

The goal of this project is to develop a set of indicators that would support to inform product development teams and decision-makers about circularity in early product development stages.



> Assignment Description

The thesis work will focus on:

- Review existing circular indicators and their applicability in early product development stages in the context of aerospace
- Propose a decision-making support using a set of circular indicators
- Test relevance and usability of the indicators on use cases

The thesis work will be supported by appropriate material, engineers, as well as sustainability specialists. We would prefer if the student(s) can perform most of the work on site at GKN Aerospace Engines headquarters in Trollhättan. Thesis works at GKN are compensated 1 000 SEK per university credit upon completion.

> Qualifications

- Master in product development, sustainability engineering, mechanical engineering or similar
- Basic knowledge of circular economy and additive manufacturing
- Interest in sustainability, circular economy and innovation

> Apply by

Send your resume and cover letter to Johanna Nylander at:
Info.EnginesSustainability@gknaerospace.com

Last date for application: 2024-11-30. Interviews will be held continuously and the position could be filled prior to the last application date.

About us

At GKN Aerospace we are shaping the Future of Flight. As a global company we are serving the world's leading aircraft and aero-engine manufacturers with three business lines: civil airframe, defence airframe and engine systems. We strive to be the most trusted partner in the sky. This means supporting our customers in delivering safe and sustainable propulsion solutions.