GRACE

JÖNKÖPING UNIVERSITY
School of Engineering

SERENE

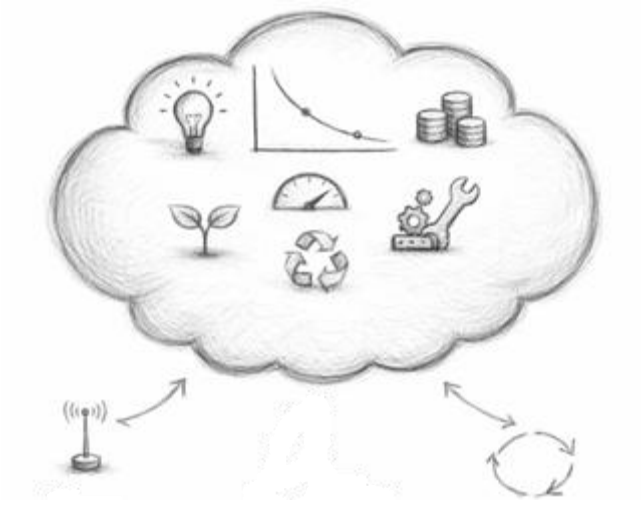
Supportive Engineering methods and information Needs for the Realisation of circular product strategies

Products for the circular economy are engineered to support circular strategies, such as repairability and recyclability. Serene will show how these new circular properties can be systematically integrated into product development, providing insight and decision support for informed decisions throughout the design process.

The purpose of the Serene project

The purpose of the Serene project is to prescribe how tools, methods, and information sources can be organised into a coherent product development process that integrates circularity and sustainability, while accounting for the iterative nature of the design process and creating a comprehensive view of the possible design space.

The project will review existing methods focused on product circularity and sustainability. These will be evaluated within companies and further developed and adapted, resulting in design methods, decision support, and evaluation tools for balancing circularity with other desired product properties. The Serene project will prepare companies to develop the products needed for the circular economy.



SOCIETAL MOTIVATION

There is a pressing need to reduce the environmental footprint of product manufacture and use. Greenhouse gases harm the world's climate, and there is also the problem of the scarcity of natural resources. There is no guarantee that all natural resources will be available at feasible price points. In particular, given today's unstable geopolitical situation. Reducing emissions and taking care of resources already in circulation can reduce the risks involved. The project Serene is part of building a green and resilient society and helping companies gain the necessary know-how.

EXPECTED RESULTS AND IMPACTS

The expected outcomes of the project Serene are two-fold. Scientific results and contributions are expected primarily by increasing the number of cases in which tools and methods for sustainable and circular design and design evaluation have been tested and evaluated in actual product development in company settings and across different product types. This is expected to elaborate on the general picture and possibly identify shortcomings for addressing in the project. There is also an industrial motivation for the companies to strengthen their capability to design products for the circular economy and thereby be better equipped for the green transition.

FACTS

Academic centre: Jönköping University, Sweden
Department: PPD – Product development, production and design

Partner companies: Fagerhult Belysning AB, GKN Aerospace Sweden AB, Kinnarps AB, Saab AB

Project duration: 2026 –2029

Research team:
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