

DiCES

DiCES (Digital Transformation of Circular Economy for Industrial Sustainability) uses digital technologies and AI to enable parallel integration of multiple circularity strategies.

Project description

The DiCES project aims to integrate the entire spectrum of value-maintaining and value-increasing strategies for circularity into a value creation system. In doing so, the project addresses the lack of support for decision-making and the insufficient networking of lifecycles and IT systems, creating an infrastructure that makes the effective combination of various circularity strategies possible.

The project combines digital technologies and AI models with ecological and economic decision models to thereby create a basis for a holistic circular economy. The optimal circular economy strategy is chosen based on the characteristics of the project and the value creation system. The data-based networking of IT systems encompassing manufacturing cycles and product lifecycles is then employed to provide sustainable value for customers.

Expected results and use

As part of this project, prototype implementations of a new kind of value creation systems were carried out at Miele's Gütersloh location and on the Melaten campus of RWTH Aachen University. The implementation of the new value creation system is based on digital and networked technologies. A core element of this is a data-based decision model, which uses multi-criteria assessments to enable the selection of an optimal circular economy strategy. The DiCES project is further conducting detailed investigation into how actions taken towards circular economy implementation, such as suitable product configurations and business models, affect value creation in individual phases of order fulfilment.

DiCES will make an important contribution to the ecological transition of the economy by developing a decision model with ecological assessment and by establishing a DIN SPEC for the assessment of circular economy strategies. The targeted use of IT systems offers additional support for this transition.

FIELD

Digital transformation of the circular economy for industrial sustainability

PROJECT PARTICIPANTS

1. Miele & Cie. KG
2. All for One Group SE
3. Klima.Metrix GmbH
4. FIR e.V. at RWTH Aachen University
5. IconPro GmbH
6. Laboratory for Machine Tools and Production Engineering (WZL) of RWTH Aachen University
7. Forcam Enisco GmbH

COORDINATOR

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TERM

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HOMEPAGE

www.project-dices.de

MORE INFO