

smart analytics project – software that aids compliance with the EU CSR Directive

Green Controlling – sustainable product development supported by a digital twin

(Stuttgart) – Design agency defortec GmbH from Dettenhausen, near Tübingen, is working in partnership with macs Software GmbH from Zimmern ob Rottweil to develop software that helps companies make environmental performance an objective parameter in the lifecycle of a product. As part of the smart analytics cooperation network, the partners' Green Controlling project is being funded by the Central Innovation Programme for SMEs (ZIM) run by the German Federal Ministry for Economic Affairs and Climate Action (BMWK). Their concept involves using a digital twin to digitally map the value chain of an actual product development project through the entire production process. The aim is to calculate the environmental performance of products and illustrate their sustainability throughout the entire lifecycle from design to the end-of-life phase. The software aims to make it easier for industrial companies and SMEs from the healthcare sector to comply with the new EU directive on sustainability reporting.

Companies are encouraged to operate, trade and manufacture in a sustainable and responsible manner. However, it is not just society in general that is attaching ever greater importance to environmentally friendly practices. The European Union's new Corporate Social Responsibility Directive (CSRD) entered into force in mid-2023, requiring companies to report in intricate detail on how their activities impact nature and the environment. This mandatory sustainability reporting must include information that is both retrospective and forward looking, and must cover short, medium and long-term timeframes. The directive applies to large industrial corporations and SMEs such as those in the medical technology sector alike.

In order to both implement sustainability and make it commercially traceable, companies need appropriate tools for effective and transparent management

controlling. However, rising levels of complexity mean the software used needs to meet very stringent requirements in terms of functionality and quality. An intuitive user interface is also indispensable as a way to ensure users can operate the software quickly and effectively.

Just such a software tool is being developed for the first time as a joint project between two companies as part of the Green Controlling project. The incredibly user-friendly software analyses all the parameters of a product that are relevant to its industrial production to assess the associated ecological aspects. This is already the fifth research project to be funded by the German Federal Ministry for Economic Affairs and Climate Action (BMWK) within the smart analytics international cooperation network.

defortec GmbH uses relevant product development stages to define the structure and modalities that are required for the sustainable CSR product creation process. The company, which is based in Dettenhausen, near Tübingen, is designing an intuitive new user interface for the controlling software. Meanwhile, macs Software GmbH, which is based in Zimmern ob Rottweil, is developing user-friendly controlling software for creating a digital twin. Besides leveraging state-of-the-art development tools, the solution also utilises artificial intelligence methods (neuronal networks and statistical algorithms).

In an integrative approach, the environmental performance of industrial products is thus to be calculated and an influence exerted over the actual processes. The aim is to expand company controlling to cover not just commercial factors such as profit and loss, balance sheets and cashflow but also the sustainability factors of the CSRD. At the heart of the software is a digital twin that precisely and digitally maps the value chain of a real-life product development project. This means that the evaluation can factor in more than just the directly product-related cost calculation. The influences exerted on environmental performance by design, usability, component structures, joining techniques, the manufacturing process, storage, utilisation and subsequent recycling can also be fed into the evaluation and taken into account right from the start in the product development project. The software is a building block for achieving the perfect product lifecycle based on the cradle-to-cradle principle. Consumer goods

manufactured in line with this principle are designed from the outset so that they can be practically recycled using chemical or mechanical processes. To recoup the raw materials, companies will need to take the products back.

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About smart analytics

The Central Innovation Programme for SMEs (ZIM) run by the German Federal Ministry for Economic Affairs and Climate Action (BMWK) is funding an international cooperation network – smart analytics – for the development of intelligent and innovative analytical methods.

BioRegio STERN Management GmbH is coordinating the international smart analytics ZIM network in Germany. The project is being funded by the BMWK and includes 30 partners from Europe. Other companies are welcome to become project partners. This will give them access to targeted support so that they can submit equally promising research and development applications to ZIM as necessary.

About defortec GmbH

defortec GmbH from Dettenhausen, near Tübingen, is an owner-operated company that harnesses passion and interdisciplinary **teamwork** to design technical products. Its work centres on designing capital goods, medical devices and user interfaces. In addition to the success of its customers' products, the company has already won more than 100 **design awards** for its own projects. Thanks to 20 years of project experience, a strong flair for design, in-depth market know-how and cross-sectoral engineering expertise, it is able to create sophisticated and practicable design concepts.

About macs Software GmbH

macs Software GmbH, from Zimmern ob Rottweil, is an owner-operated software company. macs has been a reliable partner for 24 years and is one of the world's leading producers of controlling solutions. With two sites in Germany and subsidiaries in South Africa and the USA, the company is active on all continents and is a partner to both medium and large companies. macs controlling software for integrated corporate planning helps with planning, controlling and the provision of information. It also supplies dependable key figures for corporate management purposes. More than 300 customers around the world use macs software to draw up plans that look to the future on a strategic and long-term basis.

Gefördert durch:



Bundesministerium
für Wirtschaft
und Klimaschutz



aufgrund eines Beschlusses
des Deutschen Bundestages

About BioRegio STERN Management GmbH:

BioRegio STERN Management GmbH promotes economic development in the life sciences industry, helping to strengthen the region as a business location by supporting innovations and start-up companies in the public interest. It is the main point of contact for company founders and entrepreneurs in the Stuttgart and Neckar-Alb regions, including the cities of Tübingen and Reutlingen. The STERN BioRegion is one of the largest and most successful bioregions in Germany. Its unique selling points include a mix of biotech and medtech companies that is outstanding in Germany and regional clusters in the fields of automation technology and mechanical and plant engineering.

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