

Your Partner for Digital Value Creation

Digital methods, processes, models and tools determine the value creation along the product life cycle today. On this basis, development times, quality, costs and energy as well as resource efficiency of product systems can be planned and designed in a targeted manner.

At Fraunhofer IPK, we are realizing our vision of completely digitalizing product development and planning processes. We help developing and manufacturing companies to take later phases of product systems' life cycles into account at an early stage.

In Digital Engineering, we are advancing innovative solutions along the dimensions of

- Intelligent Integration: to design individually and efficiently adapted and interoperable IT systems landscapes
- Sustainable Product Ecosystems: to consider, model and assess global interconnections of systems and their environment
- Extended Reality: to create interactive, user-centered immersive environments in an engineering metaverse

Contact

Dr.-Ing. Kai Lindow
Virtual Product
Creation division
Tel. +49 30 39006-214
kai.lindow@ipk.fraunhofer.de

Fraunhofer IPK
Pascalstr. 8–9
10587 Berlin
www.ipk.fraunhofer.de



Fraunhofer Institute for Production
Systems and Design Technology IPK

Rethinking Product Development

Digital Engineering at Fraunhofer IPK

Sustainable Product Ecosystems

Designing Sustainable Product Systems

Cross-domain interactions, modeling and simulation, MBSE with integrated LCA



Smart Services and Open Product Ecosystems

Strategies and digital business models, implementation and operation of PSS, architecture and infrastructure development and open ecology

Digital Twins for Sustainability and the Circular Economy (CE)

Development for the implementation of CE-strategies, sustainability assessment, biological transformation, feedback-to-design and green twins

Intelligent Integration

AI, ML and Semantics in Engineering

Contextualization, semantic data linking, technology application and ontologies

Data Management and PLM

Target images, strategies, architectures, data flows, ways of working, data modeling and collaboration

Model-Based Systems Engineering

Modeling, co-simulation, integration and adaption of models along the life cycle

Extended Reality

AI and ML for Extended Reality

Methods and application for user-centered scene generation

XR Assistance Systems and Training

Development of assistance systems and automated creation of training environments

Virtual Validation Methods

Virtual validation of development artifacts and integration of real-time simulations in XR

