# DIAMOND

An insight into plant modeling with neutraldata formats through the facets of DIAMOND

# Content

- Presentation of DIAMOND and its importance for digital plant modeling with neutral data formats.
- Who is behind DIAMOND? Presentation of the team and its expertise
- What motivates us? Insight into the genesis of DIAMOND and our vision for the future.
- An overview of our goals: What are our goals with DIAMOND and how do we plan to achieve them?
- Interactive survey: We want your opinion! We want to hear your thoughts on DIAMOND and digital plant modeling.
- Panel discussion with DIAMOND experts: Here you have the opportunity to learn more about DIAMOND and the future of digital plant modeling and to ask questions.

# DIAMOND at a Glance

## Key Information

DIAMOND is a 3 year project with more than 20 partners and funded by BMWK.

Bundesministerium für Wirtschaft und Technologie

The main objective is to standardize the data model and data exchange across the engineering process of production systems.

In addition to functional testing based on an industry example, the necessary, holistic transformation in companies is considered

## Key Action Fields

Development of a neutral data model and exchange

Use of modern streaming services for data networking

End to end testing based on an industry example

People and digitalization: implementation strategies, qualification, liability, ...

# Motivation and Problem Definition

- ## Technological innovations
  The automotive industry is subject to constant technological change, resulting in increasingly complex products. The integration of these technologies into the production system must take place ever faster in order to remain competitive.
- ## Networked digital images
  To ensure seamless integration and consistency of data, many companies rely on networked digital images of the production system.
- ## Extensive standards
  Extensive standards are required to ensure that the data structure and data exchange between the various systems function smoothly..
- ## Digital twins
  Digital twins make it possible to map and optimize complex production processes virtually. However, for this to be implemented successfully, all stakeholders must recognize the benefits and actively approach the transformation to a digitized world.
- ## Transformation into a digitized world
  The automotive industry must adapt to the change to a digitalized world and adjust its processes accordingly in order to remain competitive. This requires a rethink and a high willingness to invest in new technologies and processes.

# Project Goals

- **Identify and analyze** the different engineering processes incl. the required data.
- **Develop a data model** that covers the requirements of the different engineering processes and can be adapted to use cases at the same time.
- **Develop innovative concepts** for the exchange and reuse of data to promote digitization and new business models.
- **Consider and ensure cost-benefit** of project results and their implementation throughout the ecosystem.
- **Sustainable knowledge** transfer through dissemination and utilization of project results in the vehicle and supplier industry.

# Key Facts

## Data Consistency

**Why?**
Data consistency in the heterogeneous tool landscape in the digital plant design process

**How?**
Through neutral and scalable data models using standardized data exchange technologies

**What?**
A neutral and digital Common Data Model for individual machines

## Data Structure

**Why?**
Rapid increase in complexity in plant engineering as a result of digitization efforts

**How?**
Validate data structures and their interaction through scenarios and target images

**What?**
Proof of applicability based on real examples and detailed documentation

## Sustainability

**Why?**
Comprehensive planning as a prerequisite for sustainable digital twins

**How?**
Through information materials for better understanding as well as communicating the benefits and areas of application.

**What?**
Provide application examples, training materials, implementation concepts, profitability calculators, data checks, etc.

# Key Facts

**Digital Twin**
Blueprint processes and strategies for the migration to the Digital Twin in the complete plant design process.

**Transparency**
Increased transparency and resilience of production facilities through comprehensively networked value creation processes.

**Resource efficiency**
Complete control over the entire vehicle life cycle through the digital twin.

**Competitiveness**
Future planning services Made in Germany

**Knowledge Transfer**
Dissemination and utilization of project results in the vehicle and supplier industry.

**Effective Data Utilization**
Data integrity and availability despite complex processes through loss-free and efficient data processing.

# Interactive Survey

*The correct QR code will be displayed during the actual presentation.*

# Panel Discussion

*Panelists will be introduced at the presentation.*

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