Here's how we help our customers with their digital transformation journey

VOLKSWAGEN GROUP

Volkswagen Group aims to *consolidate its ALM landscape* using Codebeamer as the future ALM Solution and with a *strategic collaboration* with *PTC.* This collaboration focuses on joint definition and implementation of *Automotive Best Practices and Features* in the future environment.

BMW

BMW will replace the legacy IT-Network system with all manual processes by an automated IT-System which *ensures a sustainable BOM Landscape* that can handle the increasing configuration complexity *over the different divisions* (R&D, Sourcing and Production).

VOLVO VOLVO GROUP

Volvo Group has integrated the *digital thread* concept into their *product platform strategy* called *"CAST"* which stands for "*C*ommon *A*rchitecture and *S*hared *T*echnology", to address the enormous *scale and complexity* of their configuration *challenge.*

SCHAEFFLER

PTC and *Schaeffler* have been strategic partners since 2022. In close cooperation with PTC, Schaeffler wants to *optimize their engineering IT* environment to create an *integrated, agile and consistent IT landscape* for their developers.

Contact our Automotive Expert

Global Lead
Michele Del Mondo
Senior Director, Global Advisor Automotive
mdelmondo@ptc.com
+49 15119548184

For more information about PTC's Automotive Industry Solutions, visit:
www.ptc.com/auto **or email** **automotive-sales@ptc.com.**

121 Seaport Blvd, Boston, MA 02210

ptc
DIGITAL TRANSFORMS PHYSICAL

PTC at a glance

Pure Play Digital Thread Software company

30 years in business | 30,000 customers | 6,500 employees
96 offices in 28 countries | $2.5B annual revenue

Digital Thread Continuum

Digital Defines Physical
CAD — creo

- Model Based Definition
- Simulation Led Design Powered by Ansys
- Composites Design
- Additive Manufacturing
- Design for Electrification / Harnesses
- Large Assembly
- Generative Design
- Collaboration

Digital Controls Physical
ALM — codebeamer

- Model Based Systems Engineering
- Agile Engineering
- Quality and Regulatory Management
- Requirements
- Test Case Management
- Simulation
- Software Traceability
- Product Variability
- Product Traceability

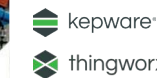### Digital Manages Physical
PLM — windchill

- Global Platform Modularity
- Model Based Engineering
- Model Based Manufacturing
- Model Based Service
- Configuration Management
- Quality and Regulatory Management
- Enterprise Change
- Automation / Systems Integration

Digital Connects Physical
IOT — kepware, thingworx

- Digital Performance Management
- Standard Work Delivery, Execution, and Compliance
- Asset Utilization & Optimization
- Remote, Predictive Service
- OT / IT Data and System Orchestration
- Industrial and Edge Connectivity

Digital Sustains Physical
SLM — SERVICEMAX a ptc technology, ptc servigistics, ptc arbortext
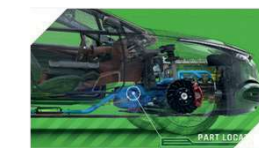
- Install Base Management
- Service Contract Management
- Spare Parts Optimization
- Condition-based Maintenance
- Work Order Management
- Field Service Dispatch
- Remote Assistance
- Service Instructions
- Technical Documentation

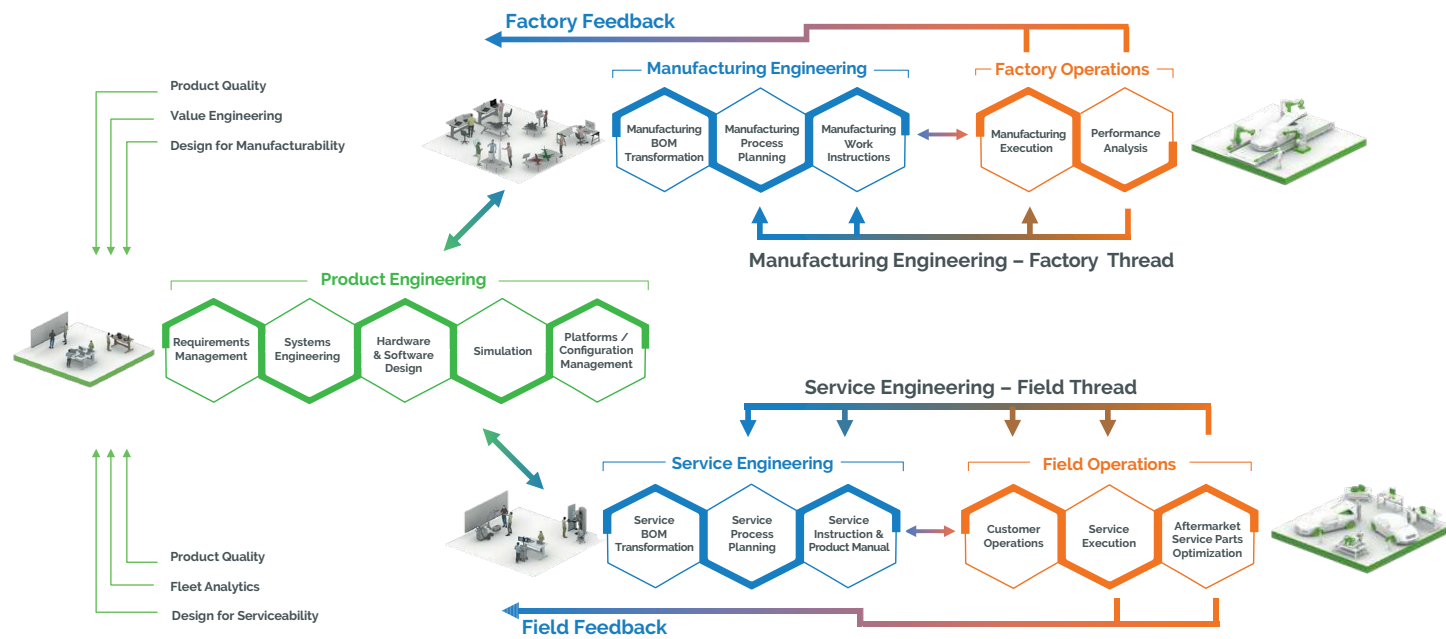### Digital Augments Physical
AR — vuforia

- Digitally Connected Work Instructions
- AI-Enhanced Visual Inspection
- On the Job Training
- Remote Collaboration
- Industrial Metaverse
- Augmented Operator Guidance

End to End Digital Transformation with Modular Open System Architecture (MOSA)

A digital thread strategy weaves its way across a company creating an array of opportunities for business impact. With improved access to data, employees find efficiencies, innovate faster, and improve customer service.

Digital Thread Powers Enterprise Transformation

Factory Feedback

Product Quality
Value Engineering
Design for Manufacturability

Manufacturing Engineering
- Manufacturing BOM Transformation
- Manufacturing Process Planning
- Manufacturing Work Instructions

Factory Operations
- Manufacturing Execution
- Performance Analysis

Manufacturing Engineering – Factory Thread

Product Engineering
- Requirements Management
- Systems Engineering
- Hardware & Software Design
- Simulation
- Platforms / Configuration Management

Service Engineering – Field Thread

Service Engineering
- Service BOM Transformation
- Service Process Planning
- Service Instruction & Product Manual

Field Operations
- Customer Operations
- Service Execution
- Aftermarket Service Parts Optimization

Product Quality
Fleet Analytics
Design for Serviceability

Field Feedback

Where you've seen us - Automotive major businesses

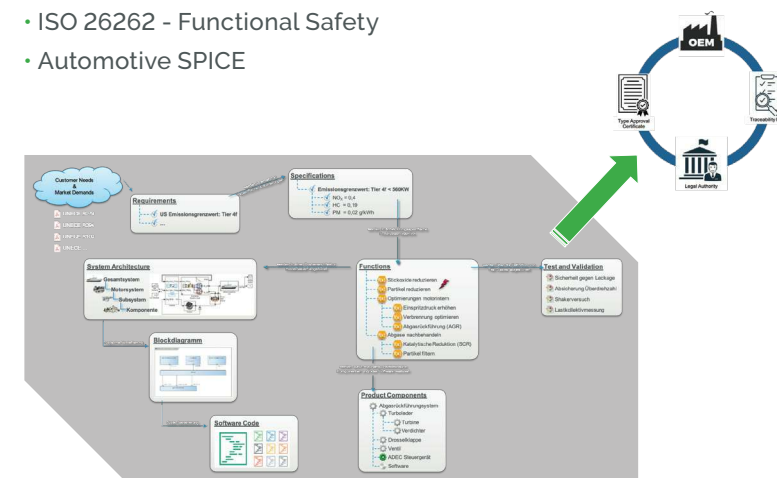| COMMERCIAL VEHICLES	SPORTS / LUXURY VEHICLES	PASSENGER VEHICLES	NEW MARKET PLAYERS	SYSTEM SUPPLIERS	COMPONENT SUPPLIERS

What are the benefits of SaaS?

Software as a Service (SaaS) and Cloud is a cornerstone of digital transformation and PTC has made considerable progress on the execution of our SaaS strategy. PTC is transitioning our products and solutions to a full SaaS environment to help customers focusing on their core business and to increase their agility in digital transformation. While SaaS offers speed and agility it complies as well with high security regulations and scales dynamically according to customer needs.
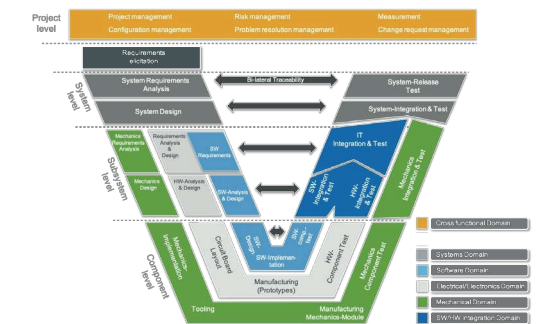
The Need for Digital Product Traceability in Automotive

- UNECE WP.29 (R155/R156)
- ISO/SAE 21434 - Cyber Security Engineering
- ISO 24089 - Software Update Engineering
- ISO 26262 - Functional Safety
- Automotive SPICE

"The automotive industry should follow a robust product development process based on a systems-engineering approach with the goal of designing systems free of unreasonable safety risks, including those from potential cybersecurity threats and vulnerabilities."

Quelle: NHTSA "Cubersecurity Best Practices for the Safety of Modern Vehicles"

PTC in the industry

The Automotive market is a major & important part of PTCs actual business & future strategy with a constantly growing customer base where agility in software development meets the complexity of product platforms.

Why do our customers choose our Digital Thread platforms?

As the worldwide software leader supporting OEM and automotive supplier organizations converging physical and digital worlds, PTC enables actionable intelligence to design, manufacture, and sustain commercial vehicles, passenger cars, bikes and their systems and component.

Industries
- Passenger Cars
- Trucks
- Busses
- Bikes
- Charging Infrastructure
- Construction Vehicle
- Tractors
- Rail