BASSETTI GROUP

TEEXMA®

Empowering Industry: Digital Collaboration for Automotive Manufacturing

Digital Transformation in Automotive Manufacturing

Your paragraph text

In today's competitive automotive industry, manufacturers face high production demands and strict regulatory standards. With every aspect of engineering under pressure, investments become critical. The TEEXMA® platform supports automotive suppliers by optimizing design and production workflows, ensuring a strong return on investment, and enhancing asset management for better operational efficiency.

Key Objectives of Digitalization in the Automotive Industry

Shifting Gears: From Assembly Lines to Digital Pipelines

Boosting Productivity

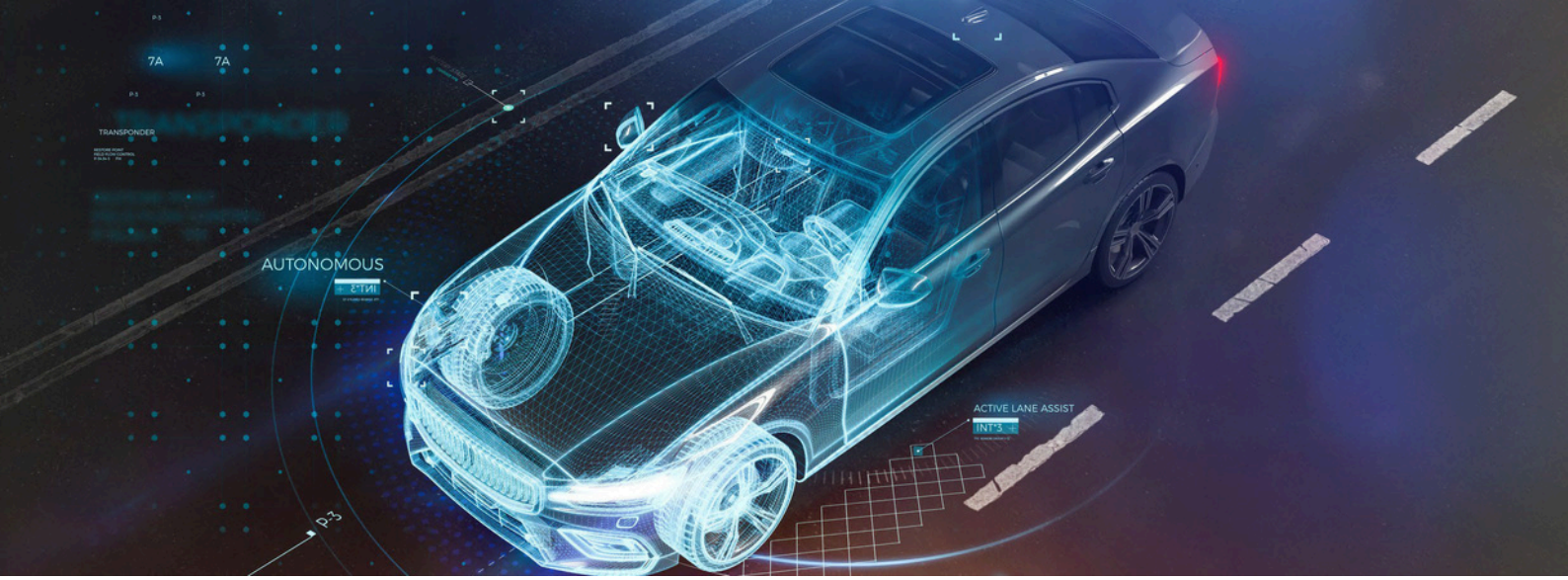
For automotive suppliers, **productivity gains** are a constant challenge. With large-scale **production volumes** and intense competition, every **financial decision** must be thoroughly evaluated to maximize **profitability** while upholding strict **quality standards.** The **direct costs** linked to **production errors** or delays can be substantial, but the broader impacts include **brand reputation damage**, financial penalties, and increased **non-quality costs**.

Ensuring Digital Integration

In the complex automotive sector, maintaining **digital integration** across departments such as **design, production**, and **quality control** is essential for smooth collaboration. Suppliers are focused on optimizing their **digital transformation** by breaking down **information silos** and ensuring **seamless process integration** across the entire value chain. To achieve this, they seek to integrate **software solutions** into their existing **Information Systems (IS)** that not only facilitate **data exchange** across teams but also provide advanced tools for **real-time KPI analysis** and informed decision-making.

Meeting Regulatory Requirements

Regulatory compliance is non-negotiable for automotive suppliers, who must adhere to strict standards such as **ISO** (e.g., **IATF 16949** or **ISO 17025** for laboratories) and industry-specific frameworks like the **AIAG-VDA FMEA Manual**. To stay competitive and protect their reputation, suppliers must ensure their **processes** and **products** comply with these globally recognized standards. As **regulations evolve**, flexible software solutions are needed to manage **documentation**, track **compliance**, and generate robust reports for **audits** and **regulatory bodies**.



TEEXMA®: A Software Platform for Technical Data Digitalization

Ensuring Digital Integration Across Departments and Optimizing Productivity

TEEXMA® is a is a collaborative platform designed to **capitalize on**, **structure**, and **enhance** high-value **technical** and **scientific data**. From **design to production**, and through challenges of **quality** and **compliance**, the platform addresses critical, strategic issues across multiple sectors..

Additionally, **TEEXMA®** integrates seamlessly with **Information Systems** (ERP, PLM, etc.) and connects directly with **equipment** and **machinery**, eliminating the inefficiencies of switching between different **software systems** and responding to specific operational needs in **real time.**

Use Cases Supported by the TEEXMA® platform

01. Digitalization of Laboratory Activities

Challenges

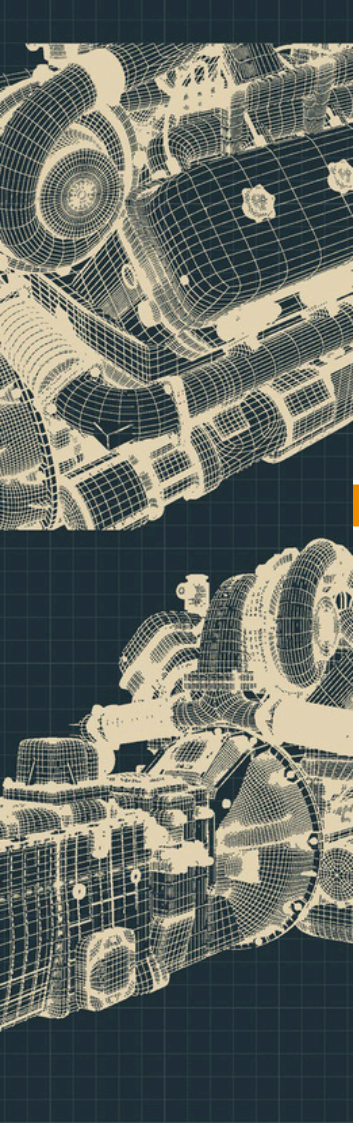
- Complying with **regulatory standards** such as **ISO 17025, IATF 16949**, and **TISAX**.
- Managing **lab operations** to maximize productivity.
- Efficiently planning **test requests** and reducing **lead times** between requests and final reports.
- Capturing and utilizing **knowledge** from **tests** and **trials**.
- Ensuring **optimal resource use** to prevent **redundant testing** and avoid unnecessary costs.
- Building a comprehensive **technical knowledge base** for future reference.
- Ensuring **data traceability** and **digital integration** across all lab processes.

TEEXMA® Contributions

TEEXMA® enables comprehensive **digitalization** of laboratory activities through:

- A **LIMS (Laboratory Information Management System)** that supports both **R&D** and **quality control**.
- An **ELN (Electronic Laboratory Notebook)** to digitize lab notebooks and ensure the **traceability** of tests within the lab.
- A **LES (Laboratory Execution System)** that streamlines control activities and fully integrates with existing systems.

This ensures seamless **digital integration** within the lab and across related departments **(Quality, Validation, Programs)**, delivering **full data traceability** and significant **performance gains.**



02. Digitalization of DVP&R (Design Verification Plan & Report)

Challenges

- Ensuring **product compliance** with specific requirements.
- Minimizing the risk of **non-compliance.**
- Optimizing **resource use** and adhering to **budget constraints.**
- Guaranteeing **product reliability.**
- Validating **design** and **manufacturing processes**.
- Sharing progress on **new product validation** easily and transparently.

TEEXMA® Contributions

TEEXMA®'s solution for managing **Validation Plans (DVP)** covers both **Design Verification (DV)** and the **Verification Report (VR)**. It integrates with **DFMEA, PFMEA, APQP**, and **functional analysis** to provide a structured approach for detailed **test planning**, **scheduling**, and comprehensive **test data management**, including **results analysis**, **documentation**, and **data traceability.**

03. Digitalization of Quality Management and FMEA

Challenges

- Ensuring compliance with **regulatory standards (IATF 16949, AIAG, VDA, BIQS).**
- Conducting **internal and external audits**, including **Layered Process Audits.**
- Enhancing **process performance** and improving **product quality**.
- Reducing **production variability** and boosting **manufacturing efficiency.**
- Identifying, analyzing, and mitigating **risks.**
- Managing **product and process FMEAs (PFMEA, DFMEA)** in compliance with **AIAG-VDA** and **8D methodologies.**
- Leveraging **reverse FMEA** and **MES feedback loops** to control **manufacturing processes.**
- Managing **complex systems,** including extended **supply chains.**
- Automating **problem-solving** through **artificial intelligence.**
- Securing **product design** through **APQP (AIAG 3rd edition).**

TEEXMA® Contributions

TEEXMA®'s QMS solution fully aligns with global automotive standards **(IATF 16949, AIAG-VDA)**. It supports a wide range of **quality management methodologies**, including **APQP/PPAP, FMEA, surveillance plans, Functional Safety, SPC, MSA, 8D,** and **QRQC/QRCI.**

04. Production Management

Challenges

- Managing **production schedules** and associated resources (**materials** and **labor**).
- Optimizing **inventory** and ensuring **on-time deliveries**.
- Monitoring **production** in real time to maximize **resource utilization**.
- Tracking **production progress, equipment availability**, and **performance** in real time.
- Ensuring **traceability** of **batches, goods**, and **resources** across the entire **production process.**
- Maintaining **high-quality standards** from **raw material reception** to the delivery of **finished products.**
- Defining and validating **machine capacities** and initiating **production runs.**
- Anticipating **defects** through **continuous control** and **SPC.**
- Ensuring the **calibration** and **availability** of **measurement equipment.**

TEEXMA® Contributions

TEEXMA® is fully integrated into the **production environment,** enabling real-time management of **production activities**, **quality control,** and **resource allocation**. Directly connected to your **IT systems (ERP, PLM)** and linked with **production equipment**, data from the **shop floor** is consolidated to provide agile and efficient production management.

05. Materials Data Management and Eco-Design

Challenges

- Complying with **REACh, RoHS**, and current **environmental regulations** (**PFAS, Occupational Exposure Limits,** etc.).
- Updating **Safety Data Sheets (SDS).**
- Keeping up with **regulatory developments (CMRT, EMRT).**
- Managing knowledge of **material properties.**
- Overseeing **procurement** and **supplier relationships.**

TEEXMA® Contributions

The **TEEXMA®** centralizes and secures **materials data** and associated knowledge in a robust, fully integrated **database.** It supports compliance with **environmental standards (REACh, RoHS,** etc.**)** and simplifies the update of regulatory data **(CMRT, EMRT)**.

06. Digitalization of Asset Management

Challenges

- Ensuring predictive maintenance of equipment through AI and IoT to reduce unexpected breakdowns.
- Adjusting preventive maintenance according to usage cycles to extend equipment lifespan.
- Minimizing corrective and curative interventions by improving real-time monitoring processes.
- Ensuring the reliability of ECME through automated metrology management systems.
- Ensuring compliance of critical equipment tolerances with ISO 9001 and IATF 16949 standards.
- Keeping industrial IT systems up to date to prevent cyberattacks, data loss, or failures.
- Planning technological obsolescence management to avoid unanticipated production stops.
- Facilitating system upgrades before they compromise security or quality.

TEEXMA® Contributions

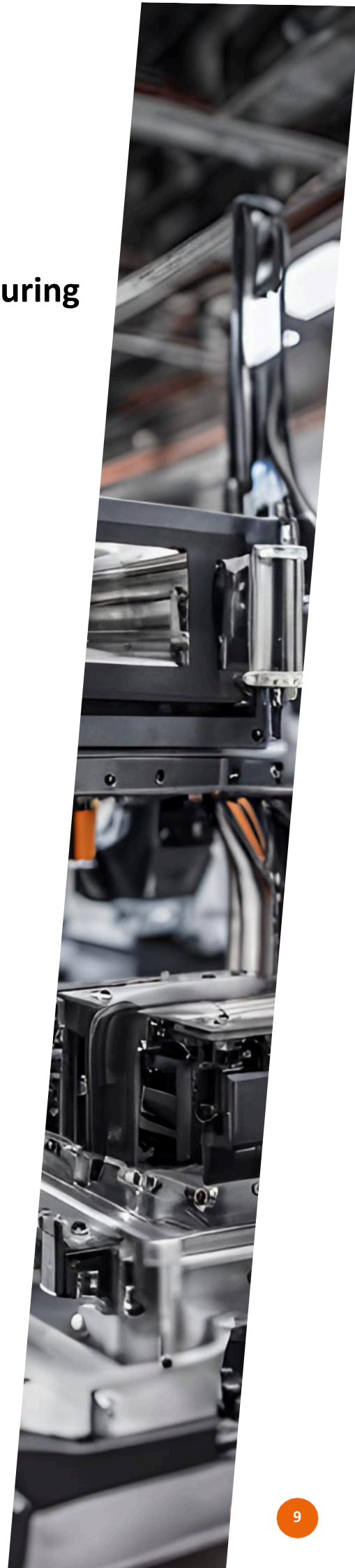
The **TEEXMA®** platform allows automotive industry manufacturers to manage all their assets through 4 software offers:

- A CMMS offer to ensure the management of Operational Condition Maintenance activities for heterogeneous assets.
- An MCS (Maintenance in Condition of Security) offer to control the vulnerability of IT systems and improve cybersecurity policy.
- A Metrology offer to ensure the reliability of measurements obtained by ECME by managing calibrations and verifications of measurement equipment.
- A Technological Obsolescence offer to conduct obsolescence studies of the necessary equipment to define an appropriate supply security strategy.

07. Digitalization of Additive Manufacturing Processes

Challenges

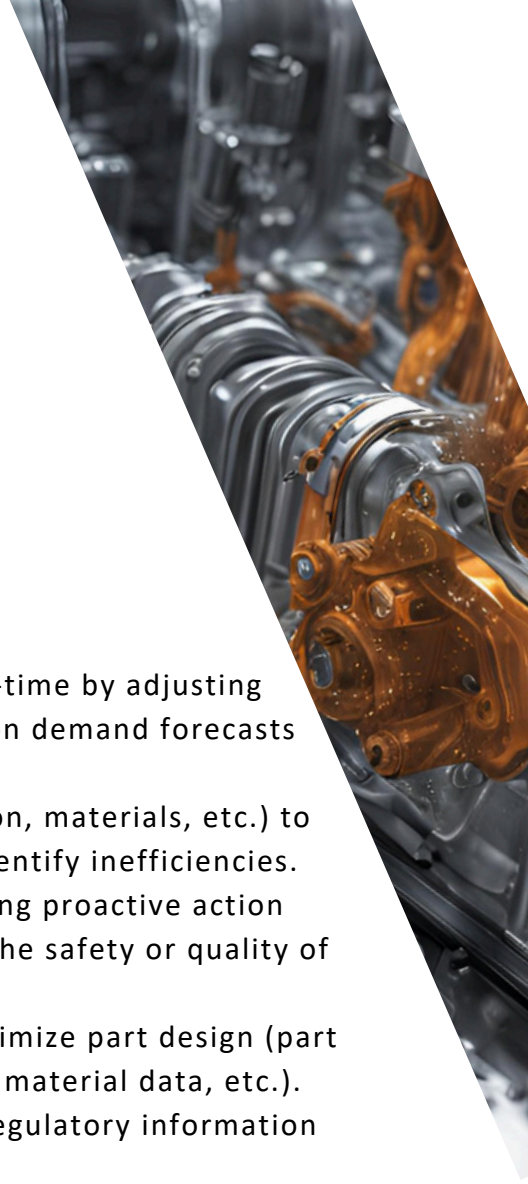
- Reducing production costs and lead times through direct production from digital files.
- Offering flexibility for customization and design of complex parts.
- Developing materials tailored to specific requirements such as resistance, durability, and lightness.
- Coordinating various stakeholders within additive manufacturing projects, from design to production.
- Meeting safety and quality standards for critical parts.
- Reducing waste while considering the impact of materials and energy consumption.
- Adapting production processes and management systems to integrate additive manufacturing.



TEEXMA® Contributions

The **TEEXMA®** platform enables the management of the entire value chain in additive manufacturing, from design to production, with full control over data and performance. By centralizing material data and digital files, accessible to all stakeholders, the software simplifies resource management (human, powders, etc.), coordination of various actors, and improves the quality of parts and additive manufacturing processes.

08. Artificial Intelligence



Challenges

- Optimizing production chains in real-time by adjusting logistics flows and resources based on demand forecasts and operational constraints.
- Interpreting complex data (production, materials, etc.) to visualize performance and quickly identify inefficiencies.
- Anticipating system failures, proposing proactive action plans, and reducing risks related to the safety or quality of finished products.
- Extracting critical information to optimize part design (part composition, mechanical properties, material data, etc.).
- Searching for complex technical or regulatory information to facilitate decision-making.

TEEXMA® Contributions

The **TEEXMA®** platform integrates artificial intelligence to address the main challenges of the automotive industry. It automates real-time industrial planning while offering advanced data visualization tools to monitor equipment performance. Through predictive algorithms, **TEEXMA®** anticipates failure risks and proposes adapted action plans. It also uses AI to extract critical technical information from large datasets, while facilitating the search for complex information through natural language interactions, thus optimizing decision-making at every stage of the industrial process.

Our Expertise in the Automotive Industry

*With over **30 years of experience** in the automotive sector,* **BASSETTI Group** *has developed deep expertise in supporting automotive suppliers. Our client base includes numerous leading automotive industry players, demonstrating our capabilities in providing tailored **digital solutions.***

TEEXMA®

One technology, multiple solutions

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