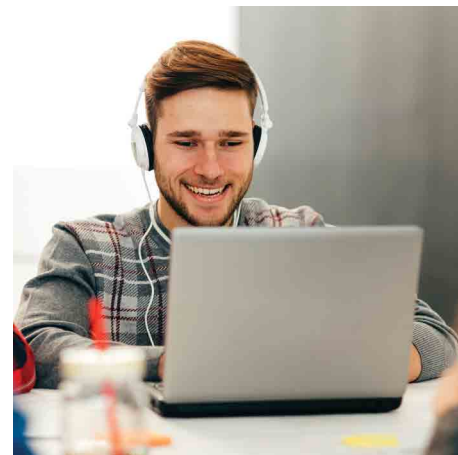# MAHLE

Unified and centralised requirements and testing approach with solutions reduces testing effort by 30 percent while supporting increased efficiencies.

Overview

MAHLE is a leading international development partner and supplier to the automotive industry as well as a pioneer for the mobility of the future. Every second vehicle produced worldwide is fitted with MAHLE components. In 2018, the group generated sales of approximately €12.6 billion with more than 79,000 employees and is represented in more than 30 countries with 160 production locations.

Challenge

'Good quality is of crucial importance. There is always room for improvement!' This motto of company founder Ernst Mahle is still taken very seriously at MAHLE. Therefore, MAHLE runs a sophisticated Product Lifecycle Management (PLM) solution that captures functional

enhancements and change requests from all of its business divisions. Over 8,000 MAHLE employees use this SAP-based PLM system to collaborate globally on creating the best products possible.

Mr. Joachim Beuter, Manager IT Services—PLM at MAHLE, talks about the challenges of project management in a decentralized environment: "Our PLM solution receives a request and moves it through an approval workflow. Once the development project has been approved, the product development is controlled and transferred to the logistic system, where the component for our automotive client will be manufactured."

He continues: "To develop and run such a complex PLM solution means handling many software changes and functional enhancements. We were concerned that a full application testing process, including regression and integration testing, could not always be maintained due to time constraints and the manual effort involved. However, insufficient testing can lead to problems in the productive PLM solution and in the end leads to production problems which should have been resolved during the PLM software development and testing phase. There was no standard process or uniform terminology, and we felt that our 'requirement to develop' process could be managed much more effectively if we consolidated and

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MR JOACHIM BEUTER
Manager IT Services—PLM
MAHLE

At a Glance

- **Industry**
  Automotive

- **Location**
  Germany

- **Challenge**
  Creating a centralised requirements and testing environment to drive efficiencies, avoid duplication of effort, and produce a higher quality PLM software

- **Products and Services**
  Caliber
  Silk Central
  Silk Test

- **Results**
  + Up to 30% anticipated test automation across thousands of application tests
  + Increased efficiency through unified central approach
  + Support for regulatory compliance
  + Full requirements and test traceability
 + More thorough application testing delivers high quality PLM software

OpenText™ Caliber soon became a front-runner and was favored by MAHLE because of its modular approach and flexibility. Caliber provides the traceability to model internal relationships between requirements, as well as external relationships with software regulatory controls. Mr. Beuter comments: "We like the modularity of Caliber and the fact that it integrates so well with the Silk solutions we were interested in. We could already see the potential benefits of introducing OpenText™ Silk Central and OpenText™ Silk Test in conjunction with Caliber."

centralized a requirements and test management platform. This would give us a 'single point of truth' and the full traceability that we need for auditing and compliance purposes, among others."

Solution

MAHLE went through a detailed evaluation process which helped to clarify priorities. It was initially felt that much efficiency could be gained from introducing application test automation, to reduce the manual effort involved in the testing part of the product life cycle. However, it became clear that capturing and tracking requirements needed to come first, with application test management next, and then test automation once the processes were working.

Caliber was implemented with help of OpenText™ Professional Services and the Support hotline. Mr. Beuter was impressed with both: "The support we received from Micro Focus (now part of OpenText™) was great, especially when compared with other software suppliers. Whenever we had an issue, it was easy to flag this and we quickly received knowledgeable help to keep us on track."
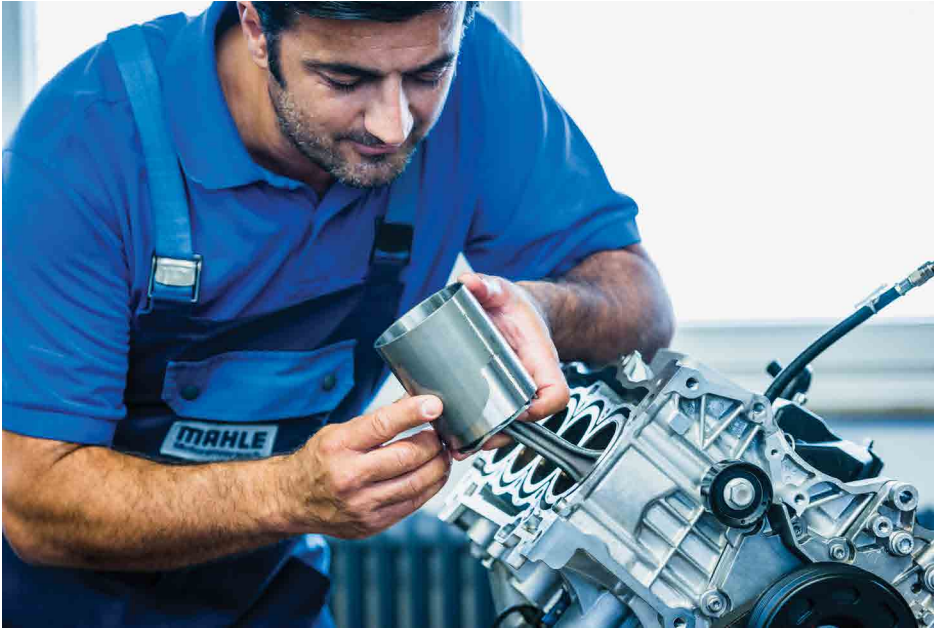
use cases, saving time. Caliber Visualize shows exactly what requirements are related and a graphical view shows the interdependencies. This is important when deciding on priorities. Role-based access to Caliber ensures a 2-step authorization process to make significant changes to requirements, and any edits of requirements can be prevented once development has started. This prevents losing time and money.

The Caliber structure is used for navigation and searching of requirements. Over 450 employees use the centralized solution, and Mr. Beuter has found the discussions feature of great benefit: "With our decentralized teams, we don't always have the opportunity to meet in person, and this helps us to clarify the requirements virtually and at people's own convenience."

A central requirements repository also means that requirements can be reused in different

The burden of application test management was centralized within MAHLE, as it was difficult gaining regional participation without a unified testing process. Silk Central provides control over application quality by providing consistent, repeatable processes for MAHLE's hybrid development model, as Mr. Beuter explains: "We use Silk Central to manage our tests and collect and analyze the results. Our development processes are designed to integrate testing much earlier within the product life cycle, through Caliber and the Silk solutions. This means we are able to test more thoroughly and deliver a higher quality PLM software."

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Silk Test will be deployed to accelerate the speed of testing; automating functional and regression tests to run autonomously with a variety of scenarios and different data. With standard processes in place, the test responsibility can easily be delegated regionally, while tracking which tests have been completed, by whom, and what the results are.

Results

The unified approach with Caliber means that all requirements across any business units are now captured in one place, which is very helpful, according to Mr. Beuter: "It is much easier to prioritize requirements and we don't lose time clarifying things between teams. We have a

common language and a single source of the truth which we all refer to."

MAHLE operates in a heavily regulated industry and is regularly audited. Having clear and transparent processes around requirements and test automation has helped with this. It has also enabled MAHLE to comply with automotive regulations allowing it to open its PLM systems for direct data exchange with its automotive manufacturing clients.

Mr. Beuter comments: "Caliber has already shown its great worth to us, and we are starting to see real benefits of Silk Central and Silk Test as well. Once Silk Test is fully operational, we expect to automate up to 30 percent of our thousands of test cases. This will help use our resources more effectively, save time, and prevent duplication of effort. We already had requests from other parts of the company to leverage our testing model. Complex projects such as moving a large SAP system from one data center to another require a proven testing process. The aim is to create our model for reuse across our IT organization."

He concludes: "Throughout this process, Micro Focus (now part of OpenText™) has acted as a true partner with fantastic support and guidance. The Micro Focus (now part of OpenText™) solutions help us live up to our founder's motto!"

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