Success Stories

We are convinced of the value of our products and consulting services. But nothing speaks stronger than a positive customer testimony.

Linde Material Handling logo

Linde Material Handling GmbH

Quality Time - Transforming Good Functional Software Requirements into High Software Quality

Software tests and initial quality assurance activities are not the only tasks that influence the overall quality of software. Functional requirements are vital when it comes to developing high quality software. Software models developed on the basis of the functional requirements are tested and optimized in a partially automated process. These are the steps that MES' experts supported Linde Material Handling GmbH (LMH) with in a recent project. LHM already uses two of MES' tools, namely the MES Test Manager$^{®}$ for dynamic tests and the MES Model Examiner$^{®}$ for static tests.

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CrESt logo

CrESt

Riding the Crest of Innovation: Model-based Development of a Collaborative Transport Robot Fleet

As a research project funded by the Federal Ministry for Education and Research (BMBF), Collaborative Embedded Systems (CrESt) focuses on the development of complex embedded systems that have to cooperate efficiently to fulfil given tasks under varying contexts and with different constituents. The project's goal is to define methods and architectures using model-based systems and system context descriptions for dynamic and scalable applications. Collaborative embedded systems (CES) and adaptive system architectures will have a significant impact on technological development in the near future. Through these systems and their architectures, current factory processes can be redefined and profit from a high degree of automation. They can also assist factories in reacting to changing production factors in a more flexible way. For instance, learning machines may take over repetitive tasks previously done by humans to optimize these processes in a goal-oriented manner. Additionally, they may take control of the work of central order management systems in order to coordinate and organize their transport orders autonomously. Centered on model-based system designs, analyses can be run to record all features a system will need with the emphasis on safe collaboration. The cases where such technology would be useful include autonomous robots, learning control systems, and adaptable factories amongst many others.

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Volvo Cars

Volvo Cars Corporation (VCC)
More Drive for Volvo Automotive Software

Volvo Cars Corporation (VCC) is one of the most well-known and respected car brands in the world. The company has earned quite a reputation for providing the latest in technology and safety to global customers. In the VCC development center on the outskirts of Gothenburg, Sweden, a staff of thousands of engineers create technology for next-generation passenger cars. The focus of Volvo Cars R&D activities, regardless of whether they apply to electrical, combustion or hybrid systems, is increasing the performance of powertrain components (engine, transmission, gearbox). Hence, the control software for powertrain applications plays a vital role.

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Mercedes-Benz Research & Development North America, Inc.
Enhanced Safety and Efficiency for the Software Design Process at Mercedes-Benz

Mercedes-Benz Research & Development North America (MBRDNA) recently carried out a large software model refactoring project with the help of MES, aiming to reduce and manage complexity in one of is E-Drive software models. The reviewed model is responsible for functions such as torque and traction, and it had grown significantly as further requirements and additional stakeholders, including developers and testers, were added. MBRDNA's main objective was to improve the testability and understandability of the model by reducing both subsystem-level complexity and complexity at the level of the entire integrated software model. This presentation will look at the steps MBRDNA took and how, as a result, the team has been able to greatly improve the overall readability, testability, navigation, and maintainability of its software modules.

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Valeo Siemens eAutomotive
Achieving 100% Quality Faster with the MES Test Center

The control software in Valeo Siemens eAutomotive's electric drive systems will be built on the basis of functional models. The models are designed and tested by experts in concrete application and software development. The software that is then used in vehicles will be generated from these software models via an automated process. In the past, MES specialists have also supported Siemens eCar in building its development process. Additionally, Siemens eCar makes thorough use of the MES tools for quality assurance - the MES Test Manager and the MES Model Examiner for static tests. With the help of MES tools, Siemens eCar and the new joint venture are implementing the safety standard ISO 26262 for the development of E/E components in the automotive sector.

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Thales Deutschland

A Roadmap for Model-based Design of Railway Systems

Thales Deutschland – Transportation Systems Division contracted MES to boost model-based system development of rail signalling and safety equipment

Thales is one of the world's leading suppliers of cutting-edge railway signalling solutions for mainline and urban rail, which guarantee the safe, reliable, convenient and efficient transport of passengers and freight. The Thales Deutschland – Transportation Systems Division includes the development centre for innovative solutions for railway signalling and safety systems.

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Renault

Renault Uses MES Software to Boost Efficiency in Model-based Development

Renault is one of the world's largest car manufacturers and a leading player in the emerging technology field of e-mobility. In Renault's LARDY and GUYANCOURT development centers on the outskirts of Paris, a staff of over 14,000 engineers is engaged in creating technology concepts for the next generation of passenger cars. A significant focus of Renault's R&D activities lies on safety-critical vehicle functionalities, including tracking control, motor management, and battery management systems.

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Volkswagen

MES Model Examiner with Excel Adapter Gives Consistent Data Formats and Efficient System Integration

Embedded systems in vehicles are becoming increasingly complex. Individual components are developed in a distributed manner and subsequently integrated into a functional overall system by the OEM or first-tier supplier. This distributed process makes the need for consistent data formats and interfaces essential. The application of MES Model Examiner$^{®}$ with the MS Excel$^{®}$ Adapter allows inconsistencies to be detected and rectified automatically, resulting in shorter development cycles and making the embedded system less susceptible to error.

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