



MKS Integrity Meets Exact Requirements At Continental AG



“By linking MKS Integrity to mySAP PLM we have a universally automated process from software development right up to production planning and control. This way we save a lot of time and benefit from additional safety and visibility.”

Dr. Thomas Knapp, Manager Software Tools and Verification Continental AG

Company Overview

Continental Automotive Systems has secured a top position as a reliable partner to all worldwide leaders in automobile manufacturing. Automotive Systems is a division of Continental AG, a leading automobile supplier and provider of brake systems, chassis components, vehicle electronics, tires and technical elastomer products. Continental AG is a multi-billion dollar concern, with around 85,000 workers globally.

The Challenge

With its technology pool, Continental Automotive Systems bundles a unique force for innovation in the development of complex system solutions. Based on a consistent focus on future technologies and innovations Continental intends to integrate individual systems and technologies in one intelligent vehicle that will lend safety, drive and dynamism to the future of the automobile.

As one of the world's largest manufacturers of electronic systems, Continental develops the hardware and software for its technologies largely in its own laboratories. Due to the flexible architecture of its control systems and comprehensive system networking skill, the company is able to realize many driving safety and comfort functions (as a straightforward software expansion of existing technologies such as ESP, for example). Continental is currently developing software upgrade packages that in the future will make it

possible to update driving safety software without having to change the hardware - a revolutionary solution in terms of technology, economy and ecology.

Following development, all systems are tested on circuits set up specifically for the purpose in Germany, Sweden and Spain. Previously, (before developers were able to commence with improvements), the change requests resulting from the tests had to be transmitted via status reports created in Word or Excel. Time constraints meant that a direct link between testers and developers was urgently needed.

At Continental, production planning and control depicted in mySAP PLM. Fully developed software was taken over in a time-intensive manual process.

Continental AG



The Solution

As a first step, Continental introduced MKS Integrity and integrated the product with the existing development environment. Change management was then embedded in order to support and automate the process sequences. The already proven project structures and application data were migrated to the overall solution upon installation.

Worldwide, about 1,200 users at 14 locations work with MKS Integrity at Continental. Work on a joint project is done simultaneously by any number of software developers across all locations – like in a local network. This process is far superior to conventional replication technologies in relation to performance and real-time availability. Changes and results are visible in real time for all project participants.

Communication and traceability during development is drastically improved.

Software projects consist of project and sub-project structures with any number of hierarchy levels. Additionally, a project can be linked with another project in order to ensure that the software components are re-used to save on complex testing tasks.

Via partnership with ILC Prostep GmbH, software development was linked with production planning and control under mySAP and the workflows on both sides were aligned with one another. The Software Release (SR) module allows Continental to copy release versions of software to mySAP PLM. These are represented in mySAP PLM by software objects that can be flexibly customized. With these objects, a wide range of configuration information and accompanying documents can be copied.

The software object can then be used in any product structure (for example, bill of materials or product designer). MySAP PLM generates development orders as required and hands them over to MKS Integrity. In a reverse process the MKS solution releases finished modules for testing or, respectively, production. This means that the time-intensive release meetings that were previously required can be dispensed with. Based on the dashboard function in MKS Integrity, managers can view the current status of all projects at any time and react accordingly.

The Results

MKS Integrity meets the exact requirements of Continental quality management and considerably improves cross-location cooperation. Having all data constantly available worldwide guarantees that information can be reproduced at any time. In addition, harmonizing country-specific working methods has led to far better visibility during development. The result was less room for error and a considerably shortened development time.

The reuse of software modules is having an extremely positive effect on the software's level of testing. The MKS solution's workflow management enables new processes to be introduced and changed easily. This means that both changes in the software and the requests associated with them can be traced back. Active tracking of every change at all levels is therefore guaranteed. If an error occurs in one software component, all applications affected by this are immediately identified via a cross-reference. Standardized interfaces mean that

MKS Integrity can also be used as an expert system that supplies all relevant data in aggregate form. This function is indispensable in today's decision making and support processes. Since the MKS Solution is embedded in the development environment, every developer is able to fully concentrate on his or her activity and the technical aspects without having to deal with formalities and processes.

The intuitive MKS user interface was warmly received by employees from the start. The time involved in releasing and transmitting finished software modules has been reduced considerably thanks to linking software development to production planning and control under mySAP PLM. Giving the MKS solution access to the planning data in mySAP PLM is being planned as the next step.

“We work worldwide with teams in different time zones. The different working methods at the individual locations alone resulted in problems. At the same time, the network's bandwidth and load played a major part. Communication throughout the development process could therefore only be improved using standardized tools.”

Dr. Udo Judaschke, Solution System and Software Engineering, Continental AG

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