

Case Study – Siemens VDO

Car Systems Manufacturer uses QStudio for Java to Support Software Development Quality Processes

Market: Car Infotainment Systems Manufacturing

Headquarters: Germany

Business Problem: In July 2001, Siemens VDO Automotive launched a world wide Excellence Program for quality improvement and cost reduction. As software forms an integral part of many of Siemens VDO products there was a pressing need to improve the software development processes as part of its goal to achieve CMM Level 3 status and to reduce development cost.

QStudio for Java Solution: QStudio for Java allowed Siemens VDO to tie Java software developers directly into the quality processes of the company and significantly improve Java code quality through automated static analysis capabilities.

Key Benefits:

- Provided early feedback on potentially serious programming errors
- Facilitated multi-site development and reuse by supporting transparency of the code
- Improved overall software quality and tied development into quality processes
- Provided coding standard support as well as improving the richness of the coding standard
- Supported a software discipline wide coding standard whilst allowing departmental additions/deviations
- Provided both a developer's and quality manager's view on the quality of the code

Deployment Simpler than Expected

International IT Manager, Erik Reek, was responsible for deploying QStudio for Java into the Siemens VDO Java development environments of the Infotainment Solutions Division. "Part of my assignment was to help implement one of Siemens VDO's Excellence Programs in the area of cost reduction and quality improvement. We already had experience with static analysis tooling so we understood the benefits of static analysis. After an evaluation of tools on the marketplace we chose QStudio for Java because in contrast to other static analysis tools that focus on verification of the code, QStudio for Java focuses on seamless integration of automated quality control with the development process. As a former Quality Manager I firmly believe that the best quality improvements result from focusing first on building quality into the product rather than just assessing the quality status of the resulting product."

Erik found deployment into the organization to be simpler than expected. "I really only needed to sit down with the developers for a half hour or so and they picked up the underlying concepts really easily. Even trainees had no problem adjusting to the new way of working. Moreover they like working with the tool because it provides them essential information for learning good programming practices. I believe the reason for this is the way QStudio provides two perspectives on the world from both the developer view as well as the development process view. This is still unique in the industry."

QStudio's ability to configure and select inspection rules as well as to customize to departments gave us a playing field to develop a rich coding standard. We allowed developers to experiment first and gave them the freedom to determine which rules needed to be complied to. After several months a consensus emerged on the most important rules as well as the right parameterization, only then did the QA department formalize this into a software discipline wide coding standard. Some departments have additional more stringent standards. QStudio easily supports this multi-departmental, multi-coding standard approach."

According to Erik there is no question of the value add of QStudio for Java. "Our measurements showed a significant improvement in code quality and team productivity. We still regularly catch high impact bugs such as issues around threads. Probably we would have caught them anyway during dynamic testing later on but the cost and time would have been factors higher as the problem would have manifested itself as a performance problem with all the attendant debugging aggravations".

QStudio still remains far ahead of its field, according to Erik. "Even today I have real difficulty in communicating to some of the other tool vendors the importance of being able to tie their tools directly into the development processes. Their mindset is often that of seeing their tools as a gatekeeper at the end of the process and not as being an integral part of the development process. As a result many of the tools provide information that I feel doesn't really help me. It is often just too difficult to interpret the results in terms that describe the quality of the code. In that respect they miss the transparency that the QStudio ISO quality model provides."

About Siemens VDO Automotive

Siemens VDO Automotive is one of the world's leading suppliers of electronics, electrics and mechatronics to the automotive industry. The company manufactures products for powertrain, engine control electronics and fuel injection technology, information and car communication systems with instrumentation, audio and navigation terminals and multimedia applications. In 2002 Siemens VDO Automotive generated sales of EUR 8.5 billion.

About QA Systems

QA Systems - The Software Health Company™ - is focused on improving its customers' software health. QA Systems develops software tools to assess, support, monitor and control the health (quality) of software applications developed by its customers both from both a preventative viewpoint (supporting good programming practices) as a diagnostic viewpoint (diagnosing possible software code health risks). See www.qa-systems.com for further information.