



Klocwork Insight Static Analysis for FDA compliance in embedded medical devices



From its headquarters in Freiburg, Germany, Stockert GmbH has been designing and manufacturing a range of electronic devices for use in the medical industry worldwide since 1985. Its area of expertise ranges from devices for isolating and anaesthetising individual nerves in different regions of the human body to RF-generators used in cardiology and neurosurgery. The functionality of these devices is driven by the embedded software developed in-house.

As Test Manager, it is Christian Ehringer’s task to ensure that the software Stockert develops can support the broad functionality the company’s products need to compete in the market, whilst also meeting the rigorous standards of safety required for mission-critical medical devices. The company has existing products certified by the US Food and Drug Administration Agency (FDA), and it is important for Stockert to gain the same certification for new products currently under development. As Christian explains, “We are committed to developing safe products and FDA approval is an important part of this. The safety of our applications depends very much on the quality of the software we develop, so we decided to explore what static source code analysis could do to help us in this area.”



“Locating every possible weakness is important in the medical sector, and Klocwork Insight has given us immense trust in our applications.”
Christian Ehringer, Test Manager, Stockert GmbH



Having read online information about Klocwork and how it can help in the FDA validation process, Christian requested an evaluation and was put in contact with Emenda, the value-added resale and support partner for Klocwork in DACH. Emenda arranged a proof of concept and Klocwork Insight was used to analyse a selection of Stockert’s C-language code, which has been developed within the Eclipse and Visual Studio (2005) IDEs using the GCC and Microsoft compilers to target a range of microcontrollers running WinCE. The evaluation was a success and, after looking at competitor tools, the decision was made to deploy Klocwork Insight licences.

As Christian explains, “We were impressed with the range of defects that Klocwork Insight reported as well as the way issues are reported in the web interface. Out-of-the-box support for the majority of our set-up was an added bonus.” Emenda provided additional services work to integrate Klocwork’s solutions with the IAR and Cosmic HCS cross-compilers, enabling the use of Klocwork tools across the Stockert development environment, and creating batch scripts to automate a Klocwork Insight

Emenda

With offices in the UK, Germany, France, Switzerland and China, Emenda specialises in the provision of software testing tools and consultancy services for the development and verification of high integrity software systems, to customers worldwide.

Emenda is a value-added support and resale partner for Klocwork with expertise and experience in deploying, supporting and providing consultancy for the Klocwork range of static analysis and developer productivity technologies.

Klocwork

A pioneer in source code analysis, Klocwork® offers a portfolio of software development productivity tools designed to ensure the security, reliability and maintainability of complex code bases. Using proven static analysis technology, Klocwork’s tools identify critical security vulnerabilities and reliability defects, optimize peer code review, and help developers create more maintainable code.

Klocwork’s products are used by C, C++, Java and C# developers working within the consumer electronics, mobile devices, medical technologies, telecommunications, military and aerospace sectors. Over 900 customers around the globe have made Klocwork tools an integral part of their development process.

