

## CUSTOMER SUCCESS STORY

# Coding for Compliance:

RR Mechatronics' Strategic Approach to Technical Debt  
with SonarQube

## The challenge

Established over three decades ago, RR Mechatronics is a prominent name in the medical instrument manufacturing sector. However, due to the highly regulated nature of their industry, the engineering team was faced with a range of challenges - the company's commitment to technological innovation and quality was at odds with the increasing burden of technical debt.

This debt, accumulated over years of rapid development, posed a substantial challenge in maintaining and upgrading their software systems. Furthermore, the need to ensure robust software quality was crucial, as the company's products played a critical role in the medical field. Another major challenge was adhering to the strict regulatory standards that govern medical device manufacturing.

## The solution

In response to these challenges, RR Mechatronics embarked on a transformative journey with the integration of SonarQube. The choice of SonarQube was strategic, considering its alignment with regulatory compliance, especially with MISRA guidelines, and its seamless integration with existing CI/CD pipelines.

What made SonarQube stand out was its evolving nature, making it accessible to the diverse development team at RR Mechatronics. SonarQube was not only adopted for new code development but also played a crucial role in managing the company's legacy code. RR Mechatronics adopted a unique approach towards its existing technical debt; legacy code was 'frozen', preventing further modifications, and the focus was shifted towards ensuring

that new code adhered to the highest standards of quality and compliance. This strategy allowed RR Mechatronics to mitigate the risks associated with its technical debt while paving the way for future innovations with Clean Code practices that ensured only high-quality code made it to production.

“The biggest benefit Sonar brings to me as a DevOps Technical Lead is Integrating code quality into the daily work of our software engineers. Making sure clean code is a topic that we discuss on a daily basis, instead of during releases or (even worse) when an issue is discovered in the field that is caused by technical debt.”

**Sander Hagendoorn, DevOps Technical Lead at RR Mechatronics**

## The result

The introduction of SonarQube marked a significant turning point for RR Mechatronics. It led to an enhancement in code quality, with developers integrating clean Code practices into their daily workflows. This change was not just technical but also cultural, fostering increased collaboration and discussions around coding standards within the team.

Managing technical debt became more systematic, with issues being promptly addressed during pull requests, thereby preventing the accumulation of new debt. Perhaps most importantly, SonarQube streamlined the process of demonstrating compliance with industry standards, a critical factor for the medical device sector. The implementation of a quality gate ensured consistent adherence to coding standards, significantly reducing the likelihood of future technical debt. The story of RR Mechatronics and SonarQube is more than just about adopting a tool; it's about a strategic shift towards a culture that values quality, compliance, and continuous improvement. This journey has not only fortified RR Mechatronics' position in the medical industry but also set a new benchmark in managing technical debt and fostering software excellence.