

# Automated Test Solutions Simplifies Implementing a Software Quality Process

## Case Study SsangYong Motor Company



### The Customer

SsangYong Motor Company is the fourth largest South Korea-based automobile manufacturer. Headquartered in Seoul, SsangYong Motor got its start building jeeps for the US Army. Since 1963, the company has supplied automobiles and commercial vehicles to the Asian and global automotive market.

### The Challenge

In 2011, SsangYong Motor Company began managing a functional safety response taskforce and needed to adopt a test solution that would easily integrate with their existing QA•C static analysis tool from PRQA and help them meet ISO 26262 compliance.

### The Solution

SsangYong chose the VectorCAST platform for its complete fidelity with the PRQA tool and its excellent reputation for unit testing, system level testing, and structural coverage analysis.

### The Advantages

VectorCAST gives SsangYong developers the ability to verify ISO 26262 compliance for software delivered from suppliers as well as assuring compliance as components are integrated into the complete automobile.

#### > Reliable and Seamless Test Environment

Automobile manufacturers seeking compliance with ISO 26262 requirements face a daunting challenge. Part 6 of the standard addresses the requirements for software development and required organizations to create tests to prove the correct implementation of low-level requirements, as well as measure code coverage to ensure testing completeness.

SsangYong Motor is able to meet ISO 26262 standards leveraging a combined VectorCAST and QA•C solution. They use PRQA QA•C for static analysis, including MISRA compliance and use VectorCAST to meet the testing and code coverage requirements. The integrated solution improves developer efficiency and results in higher quality software applications.

A key feature of VectoCAST is its perfect fidelity with the compiler and target environments being used. With VectorCAST SsangYong Motor is able to test using the production hardware ensuring that the test results reflect the real-world environment where the applications will be deployed.

#### > VectorCAST Certification Kit Eases the Path to IEC Compliance

In order to demonstrate compliance with ISO 26262, SsangYong Motor uses the VectorCAST IEC Certification Kit.

The VectorCAST IEC Certification Kit is a package of certification artifacts and tools. It provides documentation, certificates, templates, and tool qualification documents that help organizations use the VectorCAST automated test platform on projects based on the IEC 61508, EN 50128, and ISO 26262 standards. The kit includes certificates and reports from certification authority TÜV SÜD Rail GmbH, that are based on documented, application-specific verification workflows.

#### > Complete System for Testing Automotive Functional Safety

"Our testing system is now complete and possesses all the elements needed to comply with the functional safety international standards", stated Mr. Jeong Jae-wook, Functional Safety Taskforce Team Head at SsangYong Motor Company.

Mr. Jeong continued, "[With VectorCAST] we will develop components that are ISO 26262 compliant. We are now able to verify the compliance status of suppliers by applying the ISO 26262 verification standard".