KEREVAL Masters AUTOSAR Conformance Testing with Telelogic Tester

> **Customer:** KEREVAL, a French software testing laboratory specialized in components, software solutions and architecture qualification

> **Situation:** KEREVAL needed to achieve AUTOSAR compliance and integration testing to better serve its clients in the automotive industry

> **Solution:** Telelogic Tester™ was chosen as a robust and professional automated testing solution

> **Bottom Line:** Using Tester, KEREVAL has improved productivity with reusable conformance test suites in an AUTOSAR context.

"Telelogic Tester was our choice because it is a complete and professional product, which we prefer over open-source tools."

– Franck Régnier
Automotive
Project Leader
KEREVAL

The Story

KEREVAL, located in Rennes, France, is a software testing laboratory specialized in components, software solutions and architecture qualification. Independent of any testing tools editors, KEREVAL provides third-party testing and qualification services, from conformance to security and quality of service testing, in computer IT as well as in embedded systems. Dedicating more than 30 percent of its workload to R&D, KEREVAL has developed collaborations with research labs, such as Inria, Supelec, Istia and France Telecom R&D.

KEREVAL was faced with achieving AUTOSAR conformance and integration testing for complex systems in the automotive industry. "KEREVAL needed a robust testing tool with a methodology compliant with AUTOSAR," said Franck Régnier, Automotive Project Leader, KEREVAL. "The tool had to provide support for C development, TTCN-3 graphical notation, TTCN-3 debug mode, and complete IDE support."

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Robust Features for AUTOSAR Conformance

KEREVAL evaluated several TTCN-3 solutions, including Telelogic Tester, Testing Technologies TTworkbench, and open-source tools. They also looked into the possibility of building a TTCN-3 compiler. After extensive evaluation, Telelogic Tester proved to be the only solution that met all of KEREVAL's requirements. With support of Telelogic's technical team and partners, Tester was implemented just three months after selecting it.

"Telelogic Tester was our choice because it is a complete and professional product, which we prefer over open-source tools," Franck Régnier said. "It gives us the robust TTCN-3 to C compiler and real time/post mortem TTCN-3 debugger required for the embedded domain. And the product was a great value."

For the pilot project, KEREVAL worked with AUTOSAR Partners in the Open 4 AUTOSAR project, whose goal is to try out development and test methodologies to ensure that they are AUTOSAR-compliant. KEREVAL led the project's testing portion and developed conformance tests to verify sound implementation of the basic software and run-time environment (RTE). With Tester, KEREVAL was able to implement its own TTCN-3 test suites in accordance with Conformance Test Methodology recommended by AUTOSAR.

"For this automotive project, KEREVAL developed and validated its own test cases for several AUTOSAR compo-nents," Régnier said. "Tester was used to develop the abstract test suite and to generate the executable test suite."

KEREVAL used Tester for more than one year in the pilot project. Today, KEREVAL continues to rely on Tester to create a unique environment for testing in the host PC and target platform using C code. KEREVAL's teams achieve ATS development with Telelogic Tester Author™ using AUTOSAR specifications and requirements. They also develop system and target adapters to communicate with the system under test. Telelogic Tester Executor™ is used for ETS generation and execution.

KEREVAL uses Tester in the verification and validation process on AUTOSAR products: black-box test, review, static analysis or dynamic walkthrough, pre-compiling, simulation, execution and coverage analysis, use of templates and guidelines during the test activities.

The Benefits

With Tester, KEREVAL has improved productivity by reusing conformance test suites for different AUTOSAR components. The company has defined a standard validation and verification process with Tester that supports several variants of the object under test from various product suppliers. In addition, KEREVAL has enhanced efficiency by using Telelogic Tester to test hardware-independent objects in different environments.

Other benefits of using Telelogic Tester include:

- AUTOSAR conformance to attract more automotive industry clients
- Better efficiency with an automated testing approach
- Improved processes specific to testing automotive components

In the future, KEREVAL is looking at a Telelogic "global solution" in the form of integration with Telelogic DOORS® for requirements management and Telelogic Synergy™ for configuration management.

"Tester has enabled KEREVAL to automate its testing and to provide an AUTOSAR Conformance test service," Franck Régnier said. "As a result, KEREVAL has increased its competitive advantage in the automotive industry and aims to become a AUTOSAR CTA (Conformance Test Agency)."

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