

Tessy is an essential help to test our auto-generated code.
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The Tessy User: BMW



(Source: BMW)

BMW Group is one of Europe's leading providers of automobiles and motorcycles. The three brands BMW, MINI and Rolls-Royce Motor Cars are controlled from the corporation's head office in Munich, Germany. BMW has about 100,000 employees.

Testing Auto-Generated Code

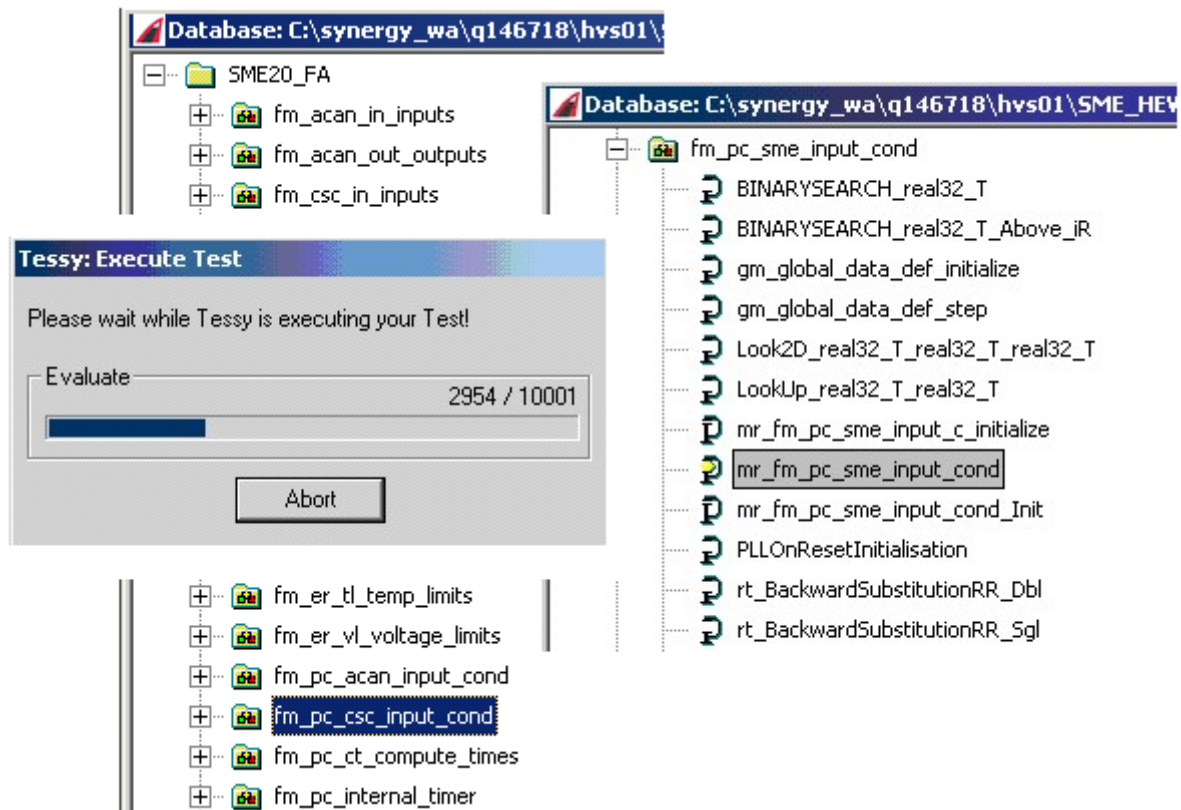
In the project at hand, BMW uses Tessy to test code that is mainly generated from Matlab/ Simulink models but incorporates also manually written code. The code is compiled using a cross compiler for a PowerPC MPC55xx from Freescale as target. The product is an intelligent battery management system for lithium-ion cells for future BMW hybrid cars. The project is rated for ASIL C according to the ISO 26262 standard.

At first glance, it seems pointless testing auto-generated code at C source level. However, this is not the case. Besides the fact that the manually written code needs testing anyway, the conversion of the floating-point arithmetic from the model simulation on the PC to floating-point arithmetic on the target might be erroneous and so also needs testing. Furthermore, other causes for problems might exist. In fact, a compiler error was detected during the tests with Tessy.

Often signal curves originating Simulink models form the test data. It turned out that such test data is easily applied to Tessy by using Microsoft Office Excel workbooks. Test data in Excel workbooks can be conveniently transferred to/from Tessy.

The project comprises of about 40 functions in the C language sense. All functions, besides the hardware interface functions, are tested using Tessy.

For some test objects up to 20,000 test cases are necessary. Tessy processes such huge amounts of test data without problems.



(Source: BMW)

Conclusion

Tessy turned out to be essential in the testing process of BMW. Tessy fulfilled all requirements, therefore it is planned to continue testing with Tessy in the future. This intention is backed by the outstanding technical support for Tessy received from Hitex and Razorcat, the manufacturer of Tessy.