

The Reactis Communicator

To : Reactis Users
From : Reactive Systems, Inc.
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IN THIS INSTALLMENT:

- Reactis Now Generates MC/DC Tests
- Ford Report Touts Reactis Benefits

REACTIS NOW GENERATES MC/DC TESTS

We are pleased to announce the availability of Reactis V2003.1.9 (beta). The release marks the first public availability of support for the Modified Condition/Decision Coverage (MC/DC) test coverage measure. MC/DC is the level of testing for the “most safety-critical” components of aviation software mandated by the Federal Aviation Administration (FAA) in its DO-178/B guidelines.

The new MC/DC facility enhances both Reactis Tester and Reactis Simulator. Tester now includes MC/DC as one of the coverage objectives that drive its test-generation algorithm. This means that, given a Simulink/Stateflow model, Tester automatically generates a test suite with the goal of maximizing the level of MC/DC coverage attained by the tests.

Reactis Simulator has also been extended to offer flexible and easy-to-understand reports to indicate which MC/DC targets have been exercised and which have not.

“We feel that the the combination of automatically generated MC/DC test data and comprehensive reporting of how the MC/DC coverage is realized presents a tremendous opportunity for our customers to cut their DO-178/B certification costs using Reactis,” said Rance Cleaveland, CEO of Reactive Systems. Cleaveland added that he expected the new MC/DC facility to also greatly benefit customers who do not have certification requirements. These customers can find “extremely subtle modeling and programming errors since the automatically-generated MC/DC tests exercise the model and software so thoroughly.”

Owners of active licenses may download the V2003.1.9 distribution from:

<http://www.reactive-systems.com/login.msp>

FORD REPORT TOUTS REACTIS BENEFITS

Reactis enables engineers to detect subtle design errors that evade detection using traditional validation techniques, according to a report released by engineers at The Ford Motor Company.

The report describes the application of Reactis to two automotive applications: an electric seat controller and an automatic transmission.

The report notes that the seat controller software is surprisingly complex and challenging to test: “A model of this level of complexity would typically require a significant amount of time to develop inputs to appropriately ‘exercise’ its functionality.” Reactis greatly speeds up this process by generating such inputs automatically.

The report goes on to state that, during the analysis of the seat controller software, Reactis “directly uncovered one variable overflow error, and led to the discovery of two logical errors ... None of these errors had been identified by previous testing.”

The report also describes the use of Reactis to generate high-quality test data for an automatic transmission model. This data can be used to ensure that the software ultimately deployed in the transmission conforms to the model.

Ford published their success story as part of the Model-Based Integration of Embedded Software (MoBIES) initiative sponsored by the Defense Advanced Research Projects Agency (DARPA). The report titled “Automated Unit Test Vector Generation” is available from the MoBIES site maintained at Berkeley: <http://vehicle.me.berkeley.edu/mobies/>

Best Regards,
The Reactis Team

This is the tenth installment of “The Reactis Communicator”, a low volume mailing list for conveying information about Reactis, RSI’s embedded software design automation tool suite. Reactis enables users to deploy model-based software testing to dramatically reduce the costs of testing embedded control software. The tools are designed for use in conjunction with the Simulink and Stateflow modeling and simulation environments offered by The MathWorks, Inc.

If you are no longer interested in receiving information about Reactis, please see the instructions below for removing yourself from the list and we apologize for the intrusion.

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