

# THEORY AND APPLICATION OF TESTING FROM CSP-CASL

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At BCTCS-2007 we investigated how to develop a theory for the evaluation of test cases with respect to formal specification. We used the specification language CSP-CASL [3] to define and evaluate black-box tests for reactive systems.

Now, we can present a consolidated theory and a framework, for which we also have developed a tool support. One of the major innovation of this approach is the separation of the test oracle and the test evaluation by defining the expected result in terms of *test colouring* and the verdict of a coloured test case in terms of *test execution*. Details of this approach can be found in [1].

Based on characterization theorems, we can use CSP-CASL-prover [2] in order to color test cases. Furthermore, we have implemented a test environment which evaluates tests on a system under test.

As work in progress we present a new testing framework based on CSP-CASL for a product line (*horizontal refinement*).

## References

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- [3] Markus Roggenbach. CSP-CASL – A new integration of process algebra and algebraic specification. *Theoretical Computer Science*, 354:42–71, 2006.

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