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SimCo – Hybrid Simulator for Testing of Component Based Applications

Abstract

Testing of component-based applications is important in order to ensure that third-party components do not compromise the functionality or properties of the whole system. However, thorough testing of functionality, behaviour and extra-functional properties is a tedious and time consuming process. In this paper we present an approach to discrete event simulation testing of components and component sets. Its unique feature is the ability to execute a mixture of real, implemented components and simulated mock-ups of the remaining parts of the application. Together, this approach allows faster testing on a wide scale of different inputs for tested components. At the same time, the use of actual components increases the confidence in the simulation test results. The approach has been implemented using the OSGi platform in the form of the SimCo framework and toolset, for which the key architectural considerations are discussed together with a short case study illustrating its usage.



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Editor Affiliations

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Authors

- Richard Lipka ⁽²¹⁾
- Tomáš Potužák ⁽²¹⁾
- Premek Brada ⁽²¹⁾
- Pavel Herout ⁽²¹⁾

Author Affiliations

- 21. Department of Computer Science and Engineering, University of West Bohemia Plzeň, Czech Republic

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