



River Publishers Series in open

## Enhancing Formal Modelling Tool Support with Increased Automation

**Author:** Kenneth Lausdahl, Aarhus University Department of Engineering, Denmark

**e-ISBN:** 9788793102026

**Available From:** October 2013

**Price:** € 0.00

### Description:

The intrinsic complexity of even simple software systems makes their development challenging. This is especially true for heterogeneous embedded control systems that include the constraints of the physical world. Formal methods and modelling techniques allow software designs to be analysed and thus contribute to their reliability and robustness. However, industrial adoption of formal methods is limited by uncertainties related to their cost, effectiveness and the skills required. This thesis has three areas of focus: manual labour reduction through automation of various kinds of analysis, with focus on validation; language translation utilised to exploit existing automated analysis techniques; and a way to model and simulate embedded control systems that demand high-fidelity representation of their environment, based on a sound formal foundation. The result is a collection of contributions to a modern integrated development environment that can analyse software specifications and simulate hybrid embedded control systems with their environment.

**Keywords:** language translation

**Denmark Head Office**  
Alsbjergvej 10  
9260 Gistrup  
Denmark  
[www.riverpublishers.com](http://www.riverpublishers.com)  
Email: [info@riverpublishers.com](mailto:info@riverpublishers.com)

**USA Office**  
Indianapolis, IN  
USA  
Tel.: +1-3176899634  
Email: [rajeev.prasad@riverpublishers.com](mailto:rajeev.prasad@riverpublishers.com)

**UK Office**  
River Publishers  
Email: [philippa.jefferies@riverpublishers.com](mailto:philippa.jefferies@riverpublishers.com)