

Optimica Testing Toolkit: a Tool-Agnostic Testing Framework for Modelica Models

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The need for regression testing increases as the size and complexity of software project grows. This is no different from a Modelica library or tool. Large Modelica projects often involves several Modelica tools and libraries which are under development. In those situations, with several orthogonal code bases, the need for systematic regression testing is needed. To address this, Optimica Testing Toolkit (OTT) was developed. OTT is a framework for performing automatic testing on Modelica models.

OTT also provides a testing pipeline that is tool agnostic, meaning it provides the same testing pipeline regardless of what compiler and simulator performs the actual model compilation and simulation. Tool agnosticism is provided by means of an abstraction layer between OTT and the actual tools. Each tool is hooked into the abstraction layer via a plugin tailored specifically to that tool.

As part of the development cycle a Graphical User Interface (GUI), seen in figure 1, was developed. The GUI can be used for test authoring, test configuration and test execution. One important aspect considered during development was to ensure that the GUI had good usability. We used a number of different user studies together with the users in order to discover usability problems, and then used iterative development to address and fix those issues.

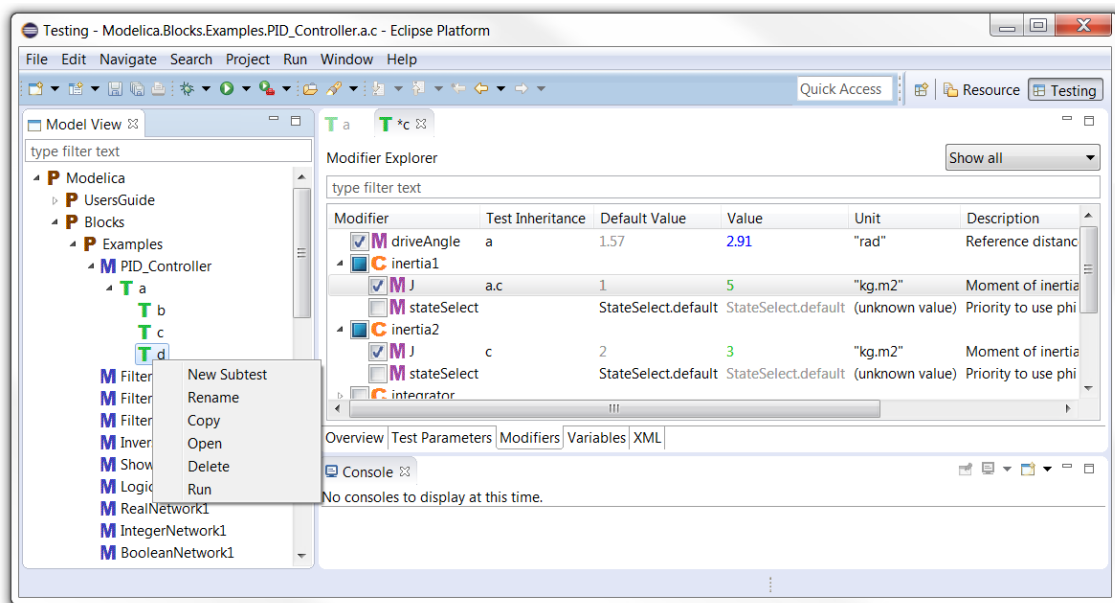


Figure 1. The OTT GUI.