Software Modeling in Physical Systems

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PELAB, together with the Open Source Modelica Consortium (an international open source effort supported by 38 organizations, see www.openmodelica.org) develops OpenModelica, an open-source Modelica-based modeling and simulation environment intended for industrial and academic usage. OpenModelica includes the OpenModelica Compiler (OMC) of the Modelica language, a language aimed at intuitively modeling physical systems.

As systems mix more and more software with the hardware, it becomes very important to model software components just as we would hardware components. The goal of this thesis is to investigate how to model software in the Modelica language, addressing issues such as how to break down software into components and how to model data and control transfer between components.

This thesis will involve both bibliographical research on existing approaches and on adaptation of these approaches to the Modelica language and a practical experimentation, involving a case study.

References:

