

Ptolemy – OpenModelica Integration for Real-time embedded System Modeling

Contact: Olena Rogovchenko (olean.rogovchenko@liu.se) or
Peter Fritzson (peter.fritzson@liu.se, tel: 0708-281484)
PELAB – Programming Environment Lab, Institutionen för Datavetenskap
www.openmodelica.org

The goal of the Ptolemy project is to study the modeling simulation and design of concurrent, real-time, embedded systems, with an emphasis on compositional construction. Ptolemy II is an open-source software framework that allows for actor-oriented design. Actors are software components that execute concurrently and communicate through messages sent via interconnected ports and a model is an interconnection of actors.

OpenModelica, on the other hand provides an open-source Modelica-based modeling and simulation environment intended for industrial and academic usage. OpenModelica, including the OpenModelica Compiler (OMC) of the Modelica language, is developed at PELAB, together with the Open Source Modelica Consortium (an international open source effort supported by 38 organizations, see www.openmodelica.org).

Ptolemy supports different modeling dimensions and provides a framework for the hierarchical integration of heterogeneous models. The goal of this master thesis is the integration of OpenModelica into the multi-paradigm modeling environment in Ptolemy.

The master thesis project requires some knowledge of compiler construction, as well as some experience and interest in advanced programming.

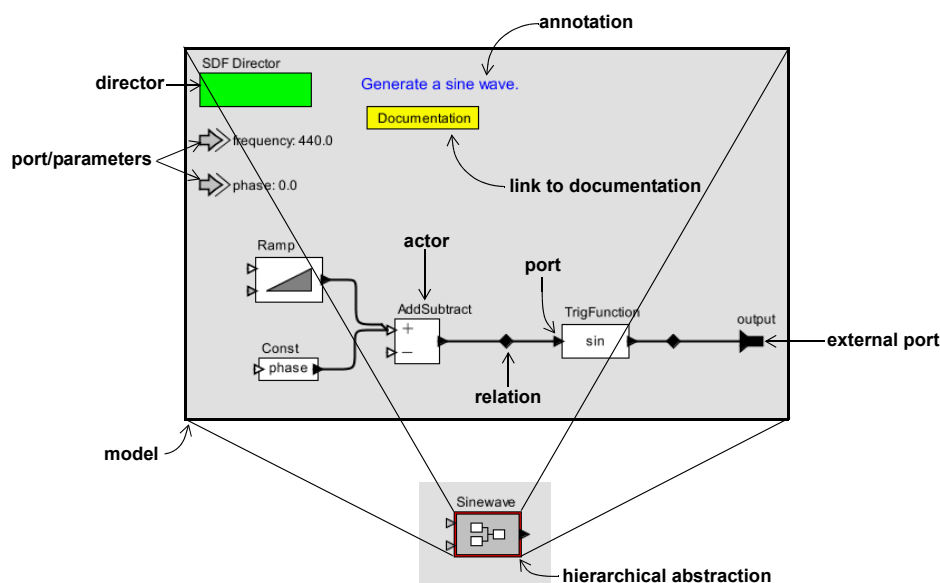


Illustration of an actor oriented model.

[1] Principles of Object-Oriented Modeling and Simulation with Modelica. Published by Wiley-IEEE Press, 2003.

[2] Johan Eker, Jorn Janneck, Edward A. Lee, Jie Liu, Xiaojun Liu, Jozsef Ludvig, Sonia Sachs, Yuhong Xiong. [Taming heterogeneity - the Ptolemy approach](#), *Proceedings of the IEEE*, 91(1):127-144, January 2003.