Build a model and choose a Model of Computation (i.e. execution semantic), our tool automatically generates a corresponding Time Petri Net (TPN) that preserves the semantic. Semantic preservation is proven by bisimulation.

A unique discrete-event kernel for all classes of systems: discrete-time, continuous time and hybrid.

Includes a discrete-event model exchange and cosimulation master for Functional Mockup Interface (FMI).

Then deploy the TPN model to a Software (windows, linux [rtai], GPU) or Hardware (FPGA, ASIC) platform for execution.

Software: TPN to C

TPN and FMU components are compiled into dynamic libraries

Hardware: TPN to VHDL

Places: synchronous components
Transitions: asynchronous components
Arcs: concurrent logic equations

Semantic preservation

Semantic of our MoCs is written as a formal specification

We can build the state space of the generated TPN model then bisimilarity between the semantic of the TPN model and the semantic of your model with its MoC is ensured.

Work in progress

Mixed (software/hardware) platform and real time simulation for Virtual Prototyping, Rapid Prototyping or Hardware in the loop simulation

The correct decomposition of the model is ensured by the theory of Petri Net with different blocks communicating through places.