

Connecting Fluid Survival Tool to the Petri net world with model-driven engineering techniques

Recently, Fluid Survival Tool (FST) has been developed for model checking Hybrid Petri net models against Stochastic Time Logic, which allows to model systems with continuous and discrete variables with stochastics. These Hybrid Petri net models have a datastructure that accepts a textual language as user input. There is a variety of tools that allow to simulate and/or to draw Petri nets with a graphical editor such as DrawNET, Modelica, KB3, GRIF Petri and SimHPN. By connecting FST to the Petri net world, FST can use the strengths of other tools, such as graphical editors and simulation, and provide a powerful exact analysis for existing case studies and models that exist in other tools. So, the main objective is to connect FST to a variety of Petri net tools and vice versa with the aid of model-driven engineering techniques, such as model transformations, metamodels and pivot models.

To achieve this objective the following steps should be taken:

- literature research on Petri net models and tools, especially for FST
- define an appropriate architecture (transformation chain) to transform FST models into a variety of Petri net models and vice versa with model-driven engineering techniques
- implement the proposed software architecture
- verify the proposed software architecture with a case study
- (possibly) define an improved Hybrid Petri net modelling language for FST

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