Increasing interdisciplinarity and complexity of systems requires efficient collaborative development process. In the model-based development, models are interdependent and constrained by each other, which can cause conflicts/inconsistencies among them. Thus, the combination and sequence of potential solutions should be optimized to increase efficiency and reliability. The goal of this thesis is to model the system behavior with multiple models and transform models into each other in order to ensure consistency among them.

**Tasks:**
- Building meta-models and model instances about the system behavior
- Defining model transformation rules in a logic language
- Conducting automatic model transformation and solution planning

**Requirements:**
- Basics in UML/SysML, Simulink
- Basics in meta-modelling, model-transformation methods
- Experience in Java programming and Eclipse Modeling Framework would be a plus