I. CONTEXT

In the emergent Model Driven Engineering a set of different model types is used.

To automate the model-to-model transformations, model transformation languages are used.

Due to the high complexity of model transformations tool support is necessary.

II. PROBLEM STATEMENT

QVT Relations (QVT-R) is a declarative model transformation language.

Current Problems

- Impedance mismatch between design time and runtime
- Lack of tooling for debugging

III. GOAL

The aim of this thesis is to create a graphical debugging approach visualizing QVT-R model transformations.

Intuitive debugging of complex code should be made possible within seconds. The operational semantics should be visualized and executed by a prototype.

IV. METHODOLOGY

A transformation language called TROPIC is used for the visualization. It is based on Coloured Petri Nets and offers an explicit visualization of the operational semantics. Errors in the transformation specification are typically easy to recognize (missing arrows, wrong colourings, ...).

V. SOLUTION

Grade parses QVT-R code and classifies the retrieved elements in categories. Afterwards an execution ordering is defined based on pre- and postconditions used in QVT-R.

By identifying correspondences between source and target model, a transformation net is created. The serialization and synchronization of the transformation net as well as the loading of the input model finish the creation of the debugging view.