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

It is the aim of this thesis 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, ...).

VI. RESULTS

- Powerful and intuitive graphical debugging approach
- High performance (about 1s for typical examples)
- Use of state-of-the-art plugins
- Special cases (e.g., complex queries) are not supported yet
- Transformation nets challenge current visualization techniques

The transformation net visualizes the operational semantics of the declared mappings in the QVT-R code.