

Myself

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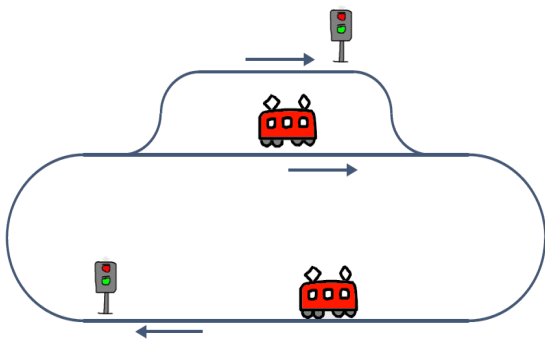
Software Engineering Group

Prof. Dr. Wilhelm Schäfer



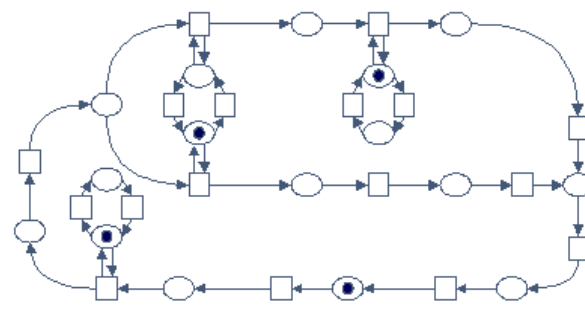
ComponentTools Project

- Basis for tools to
 - Develop component-based flow systems
 - By the aid of formal methods

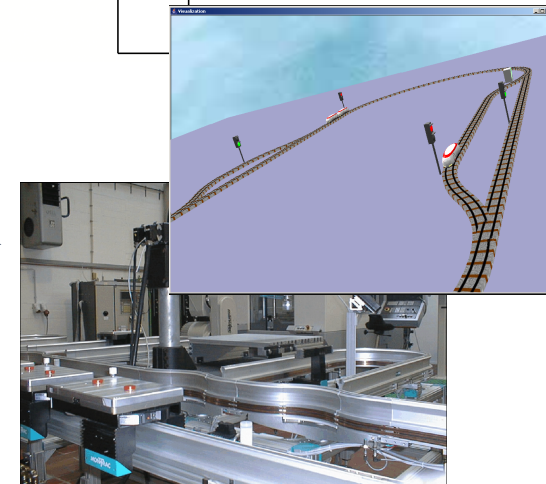
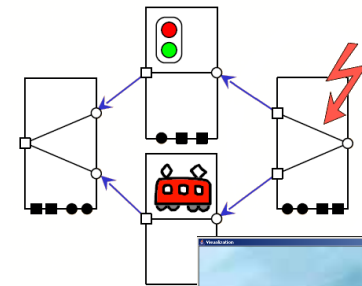


Modeling

Model Transformation



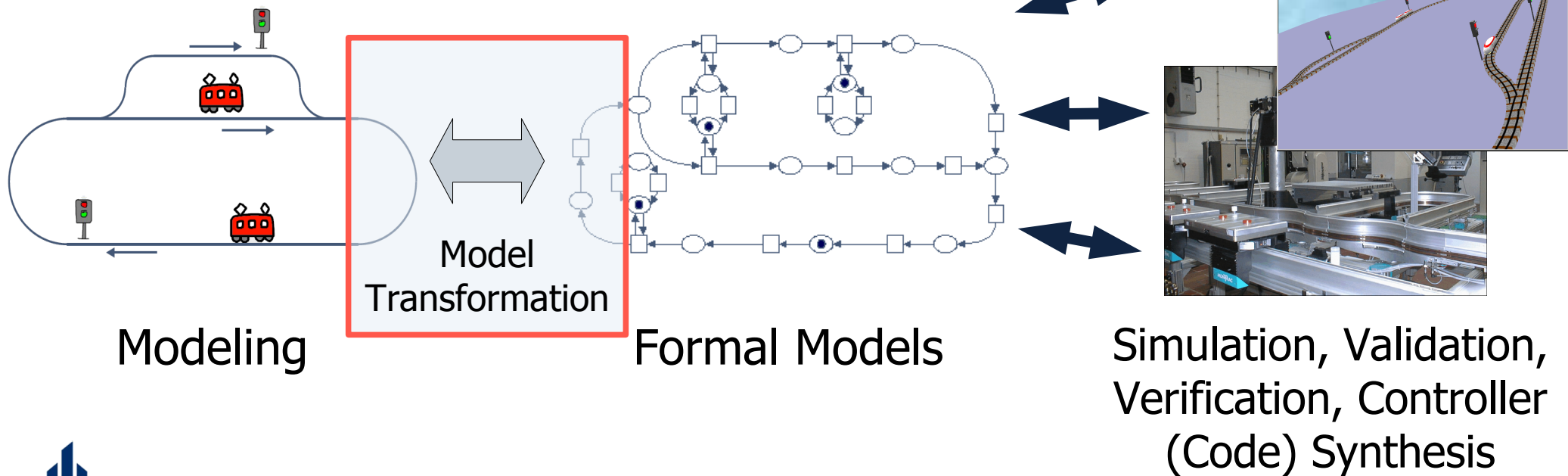
Formal Models



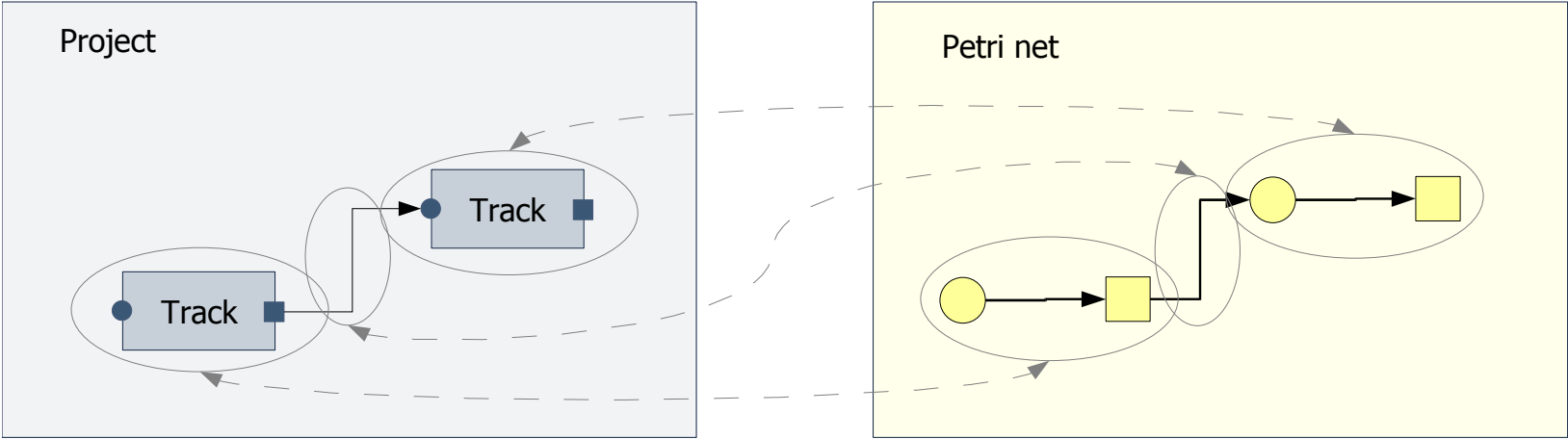
Simulation, Validation, Verification, Controller (Code) Synthesis

Project Group ComponentTools

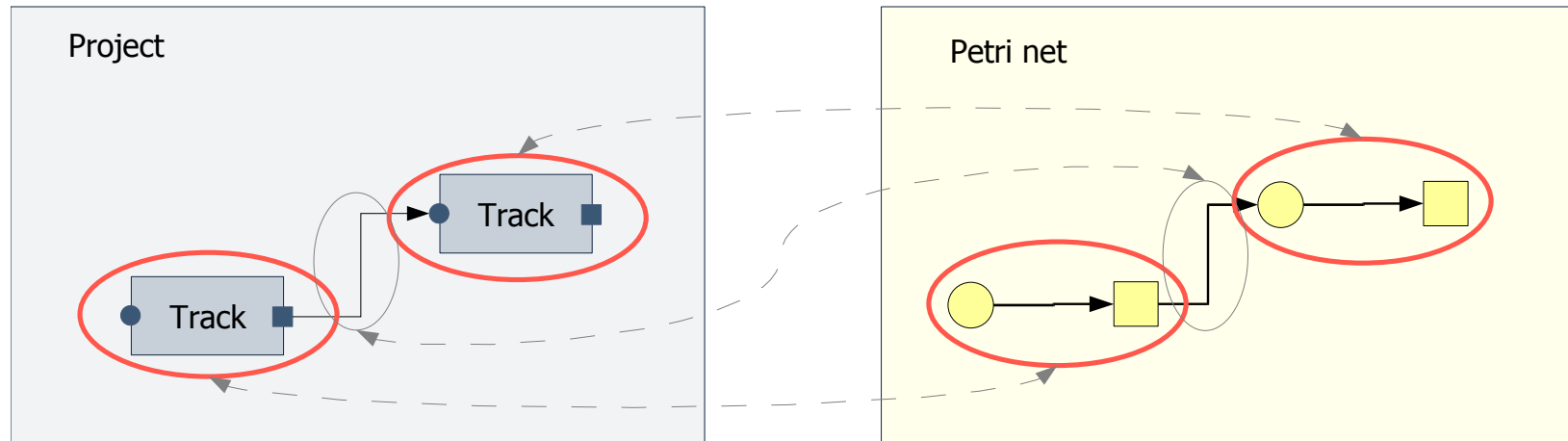
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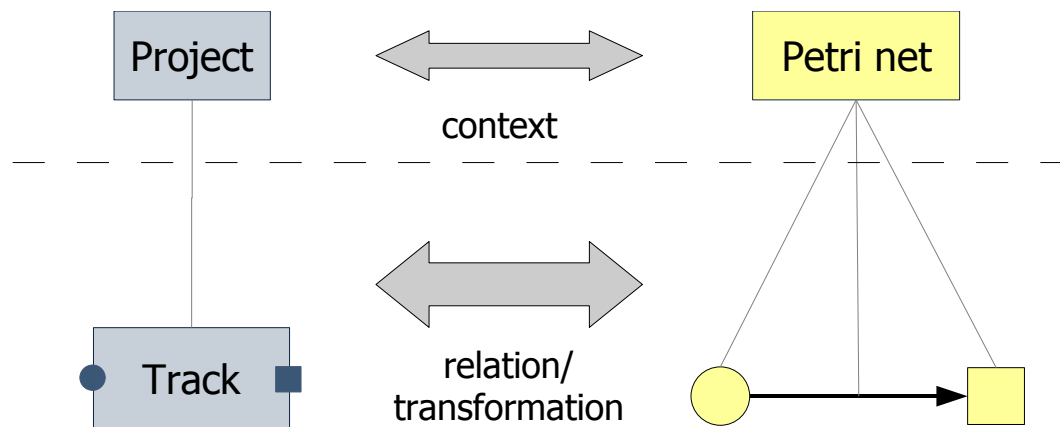
Example: ComponentTools To Petrinet



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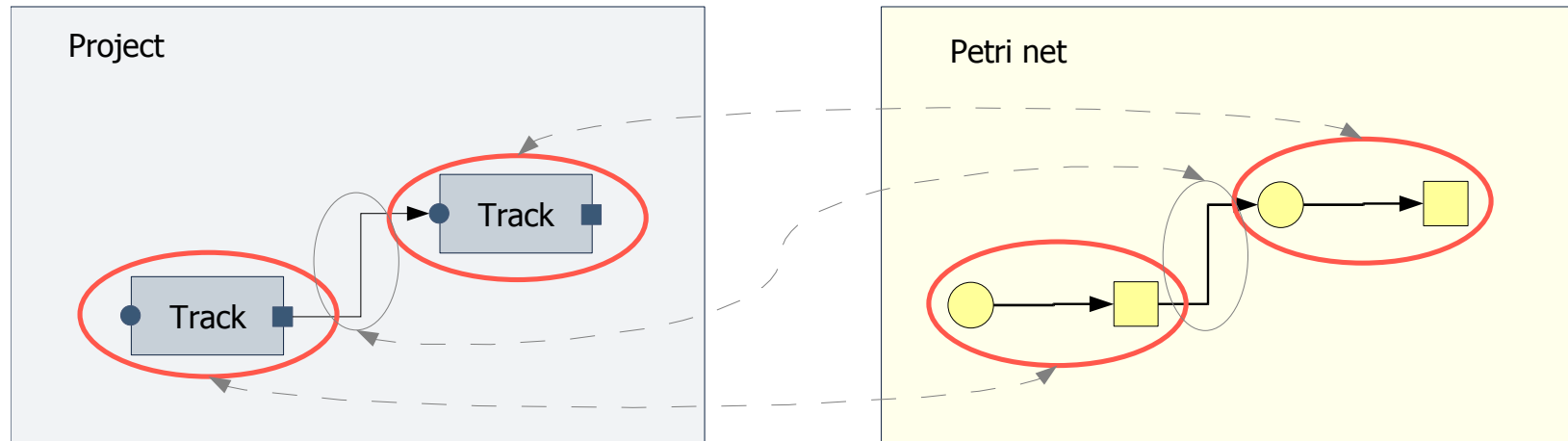


Example Rule: TrackToPlaceArcTransition

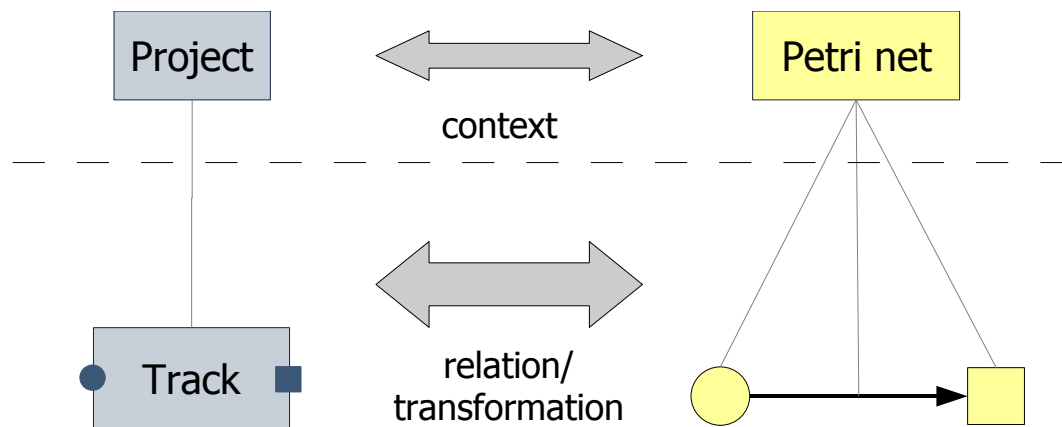


- Basic principle of
- QVT
 - TGGs (Triple Graph Grammars)

Example: ComponentTools To Petrinet



Example Rule: TrackToPlaceArcTransition

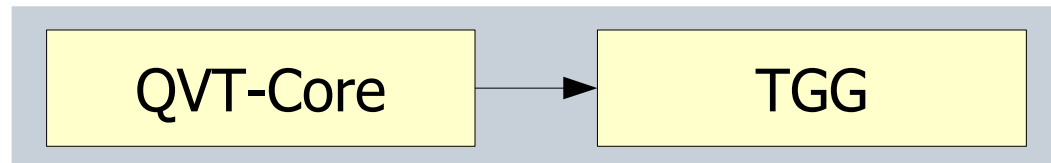


Basic principle of

- QVT
- TGGs (Triple Graph Grammars)

Master Thesis Achievements

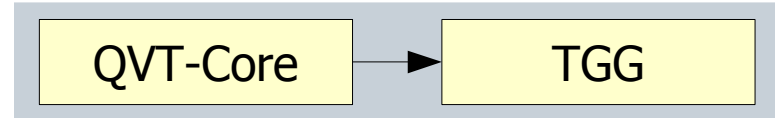
- **A QVT-Core to TGG Transformation**
 - For fundamental QVT constructs



Master Thesis Achievements

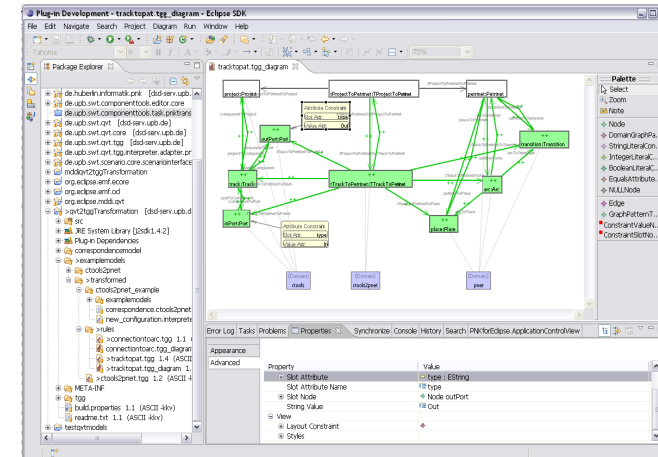
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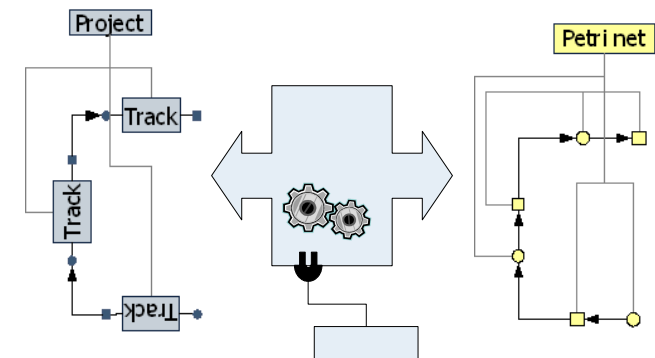
- Re-Design of a **TGG Metamodel**

- Aligned to QVT
- Implementation of a **Rule Editor**



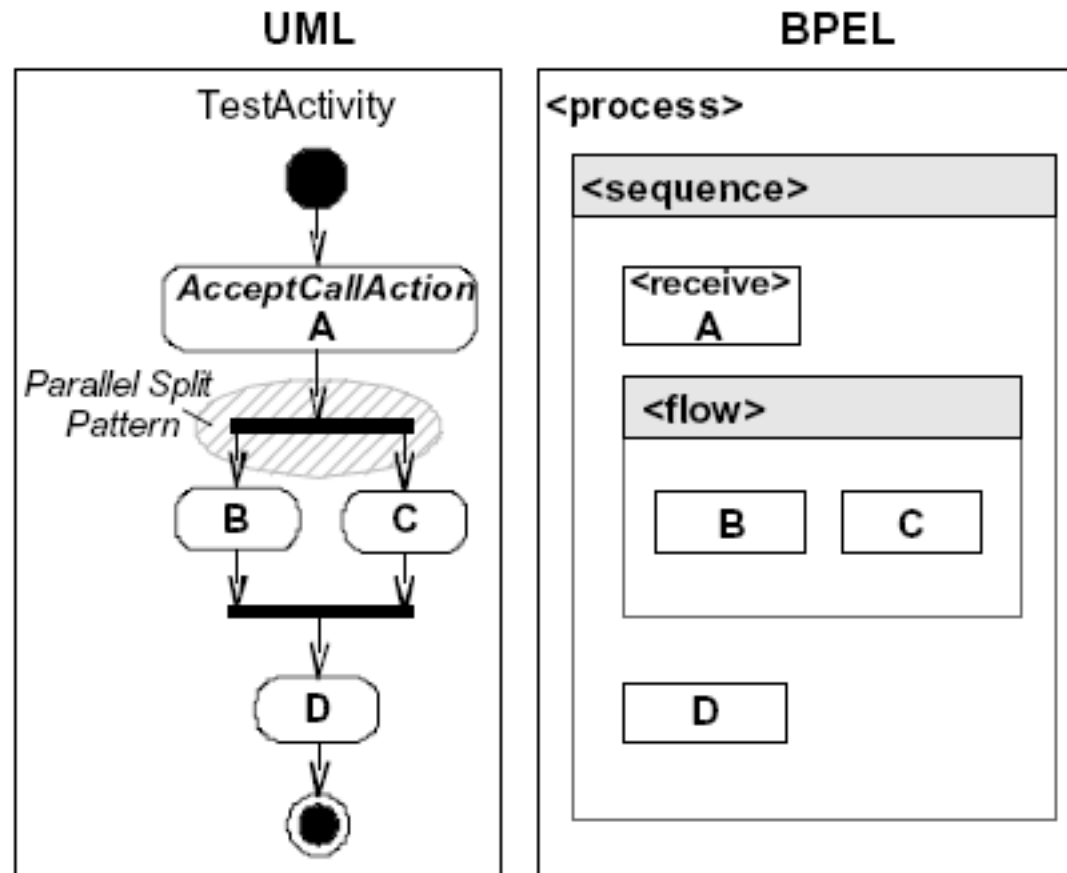
- Re-Design of a **TGG Interpreter**

- Graph Matching algorithm
- Extensible to TGG enhancements



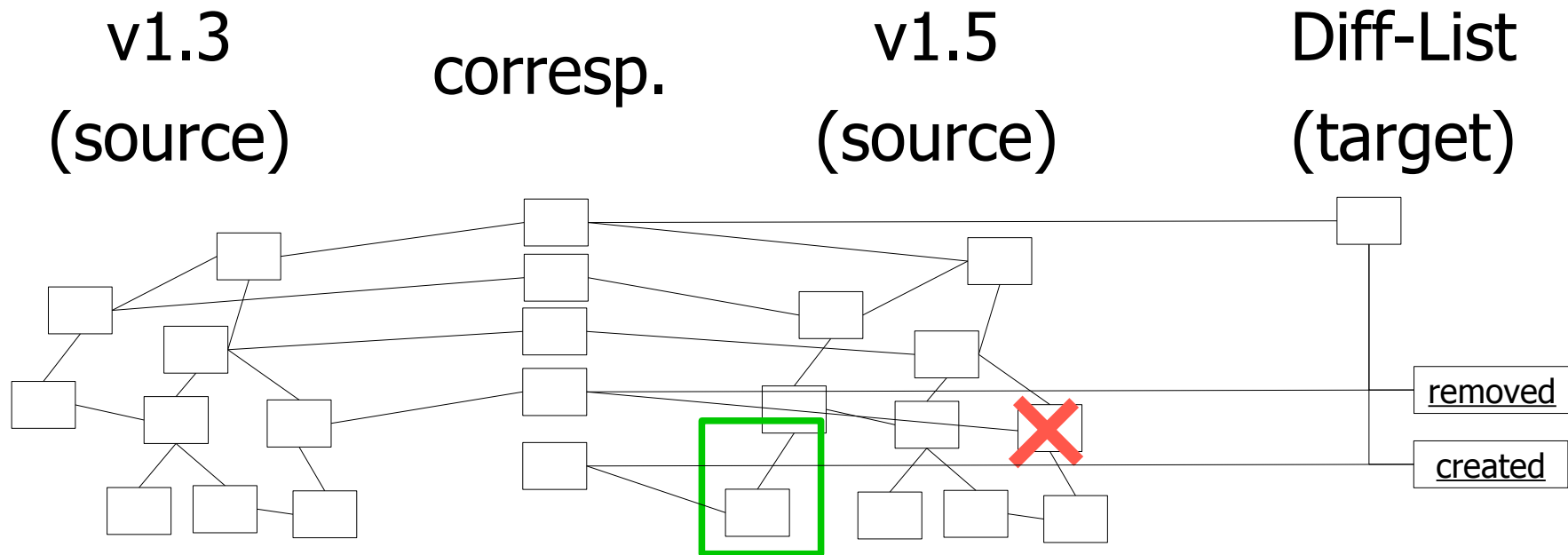
Related Work (II)

- TGGs for *Pattern-based Workflow Transformations*



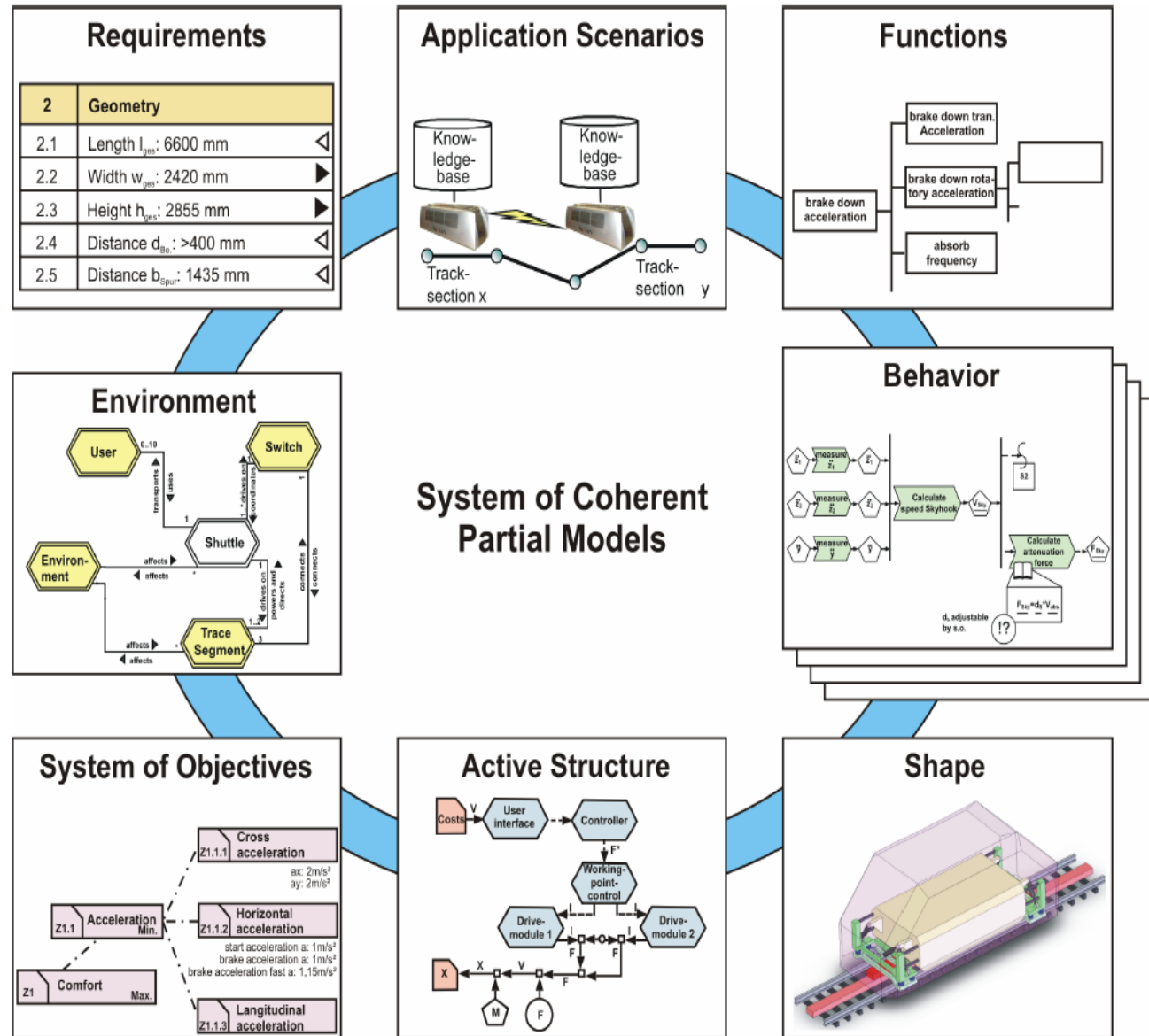
Related Work (III)

- TGGs for Version Control



Related Work (IV)

- SFB 614



Research interests

- Integration of model-based software
 - Different models for different domains
 - Different levels of abstraction
 - Domain spanning vs. domain specific models
- Integration of model-based software still not efficient
 - Rule Design is often a difficult and tedious task
 - Rules are often complex and processing is often slow
 - Common tool integration scenarios not well-defined