A comparison of AToMPM and GROOVE

Model Driven Engineering

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Overview

- Metamodelling
- Modelling
- Model transformation
- Features
- Project

Metamodelling

AToMPM

- Class Diagram formalism
- extended with constraints and actions
- JavaScript

Metamodelling

AToMPM example

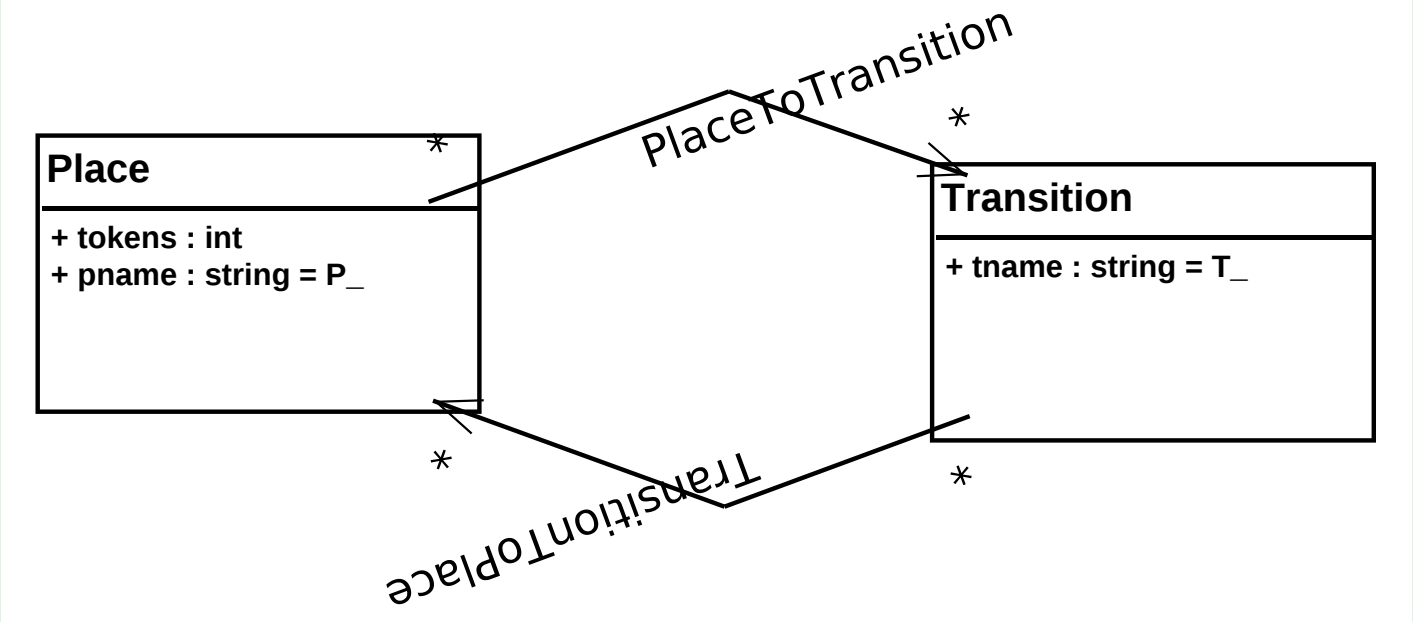

Figure : Petri Net metamodel in AToMPM

Metamodelling

GROOVE

- type graph
- optional

Metamodelling

GROOVE example

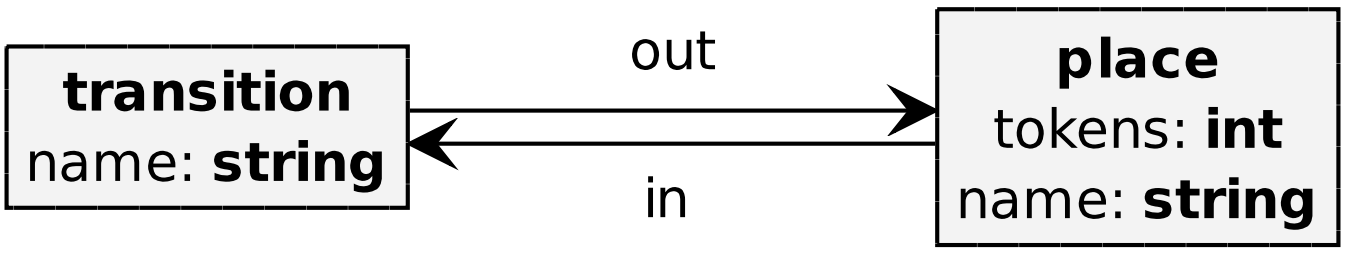

Figure : Petri Net metamodel in GROOVE

Modelling

AToMPM

- custom concrete syntax
- constraint verification

AToMPM example

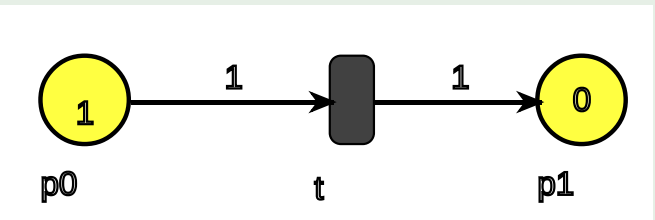

Figure : Petri Net model in AToMPM

Modelling

GROOVE

- fixed concrete syntax
- attributes visually represented, part of the graph

GROOVE example

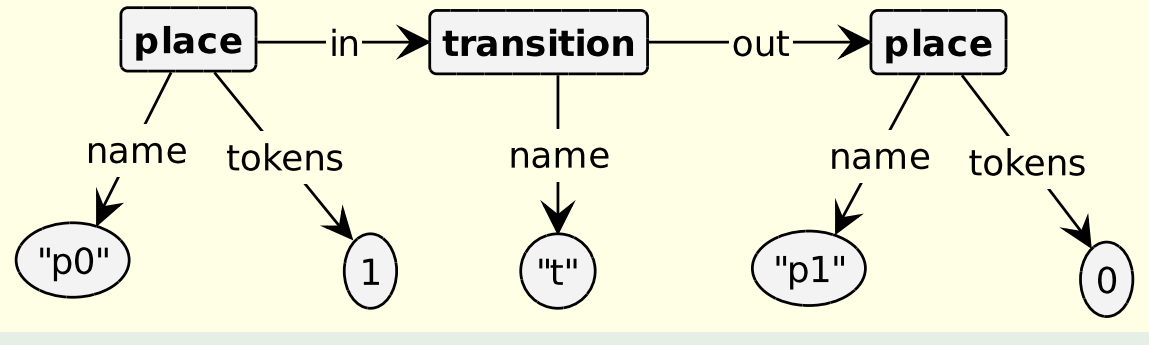

Figure : Petri Net model in GROOVE

Modelling

GROOVE example

Compressed visual representation:

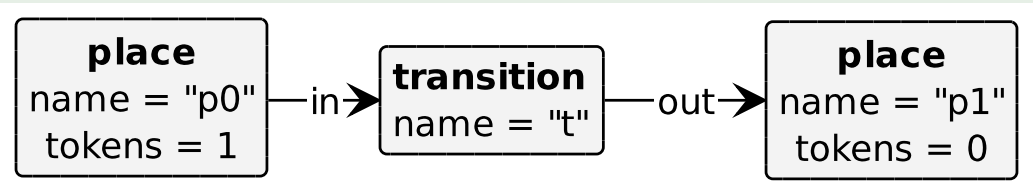

Figure : Petri Net model in GROOVE

Model transformation

AToMPM

- Left Hand Side (LHS)
- Right Hand Side (RHS)
- Negative Application Condition (NAC)

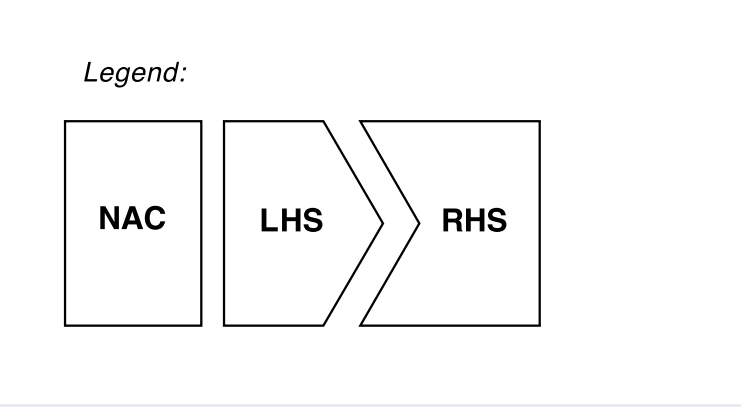

Figure : AToMPM transformation rule legend

Model transformation

GROOVE

1 graph with 4 types of nodes:

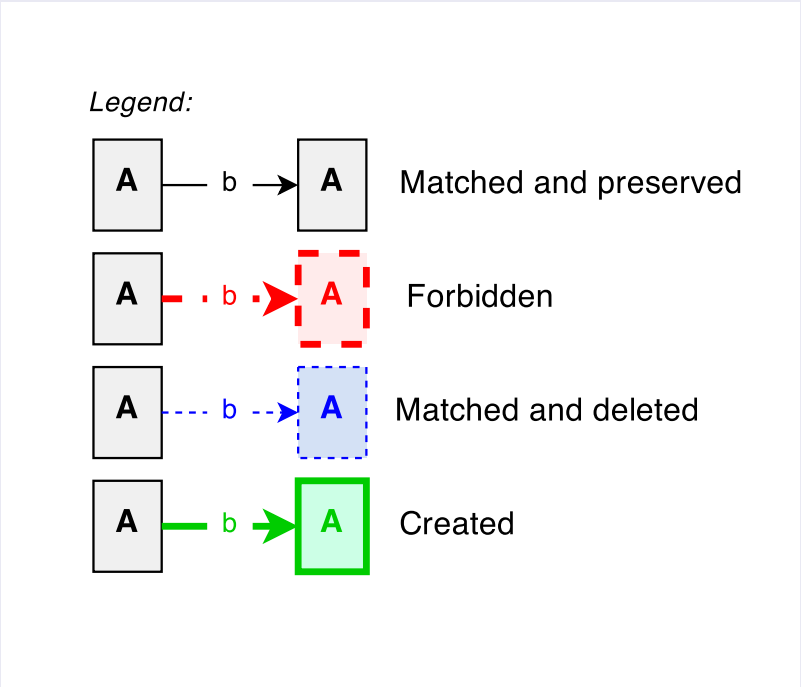

Figure : GROOVE transformation rule legend

Model transformation

GROOVE and AToMPM

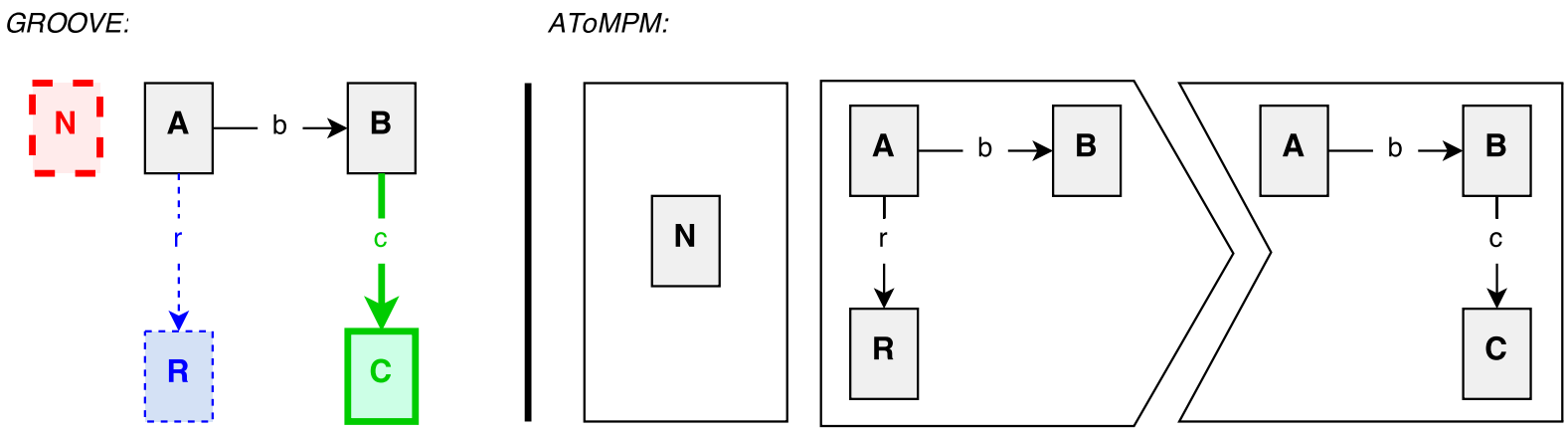

Figure : GROOVE node positions in AToMPM rule

Model transformation

GROOVE example

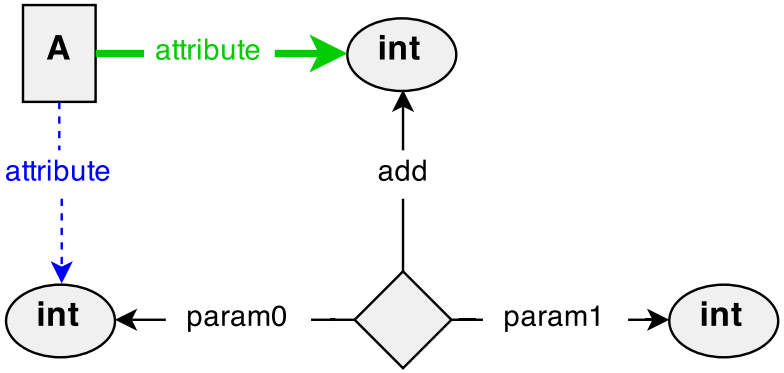

Figure : GROOVE attribute operation

Model transformation

AToMPM

application order of transformation rules:

- control language: MoTif
- visual representation of the control flow

MoTif example

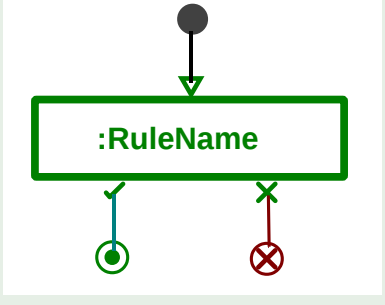

Figure : MoTif example rule

Model transformation

GROOVE

application order of transformation rules:

- arbitrary rules
- priorities
- control language: textual

Features

GROOVE:

- state space exploration

AToMPM:

- custom concrete syntax
- JavaScript and Python
- code generation

Project

- Implementation of RPGame formalism in GROOVE.
- Equivalent of implementation in AToMPM.
- Analysis of RPGame with GROOVE.