Instance Based Meta-Model Generation

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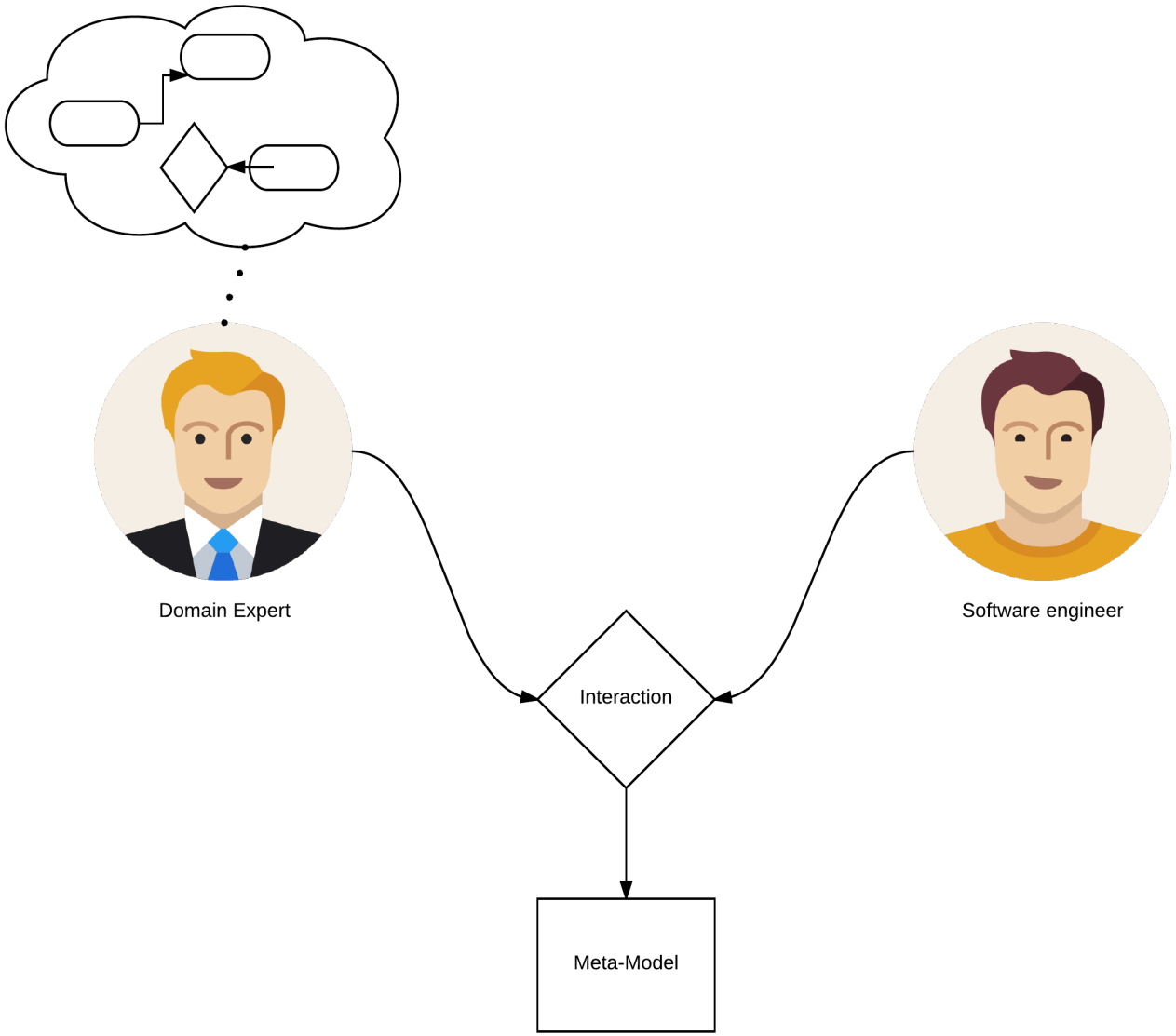
Overview

Introduction



Related Work

[Lopez-Fernandez, 2015]

- Scetching
- Scetch to model fragments
- Meta-model induction
- Refactoring
- Testing
- Compile to target

Lopez-Fernondez (2015)
Example-driven meta-model development

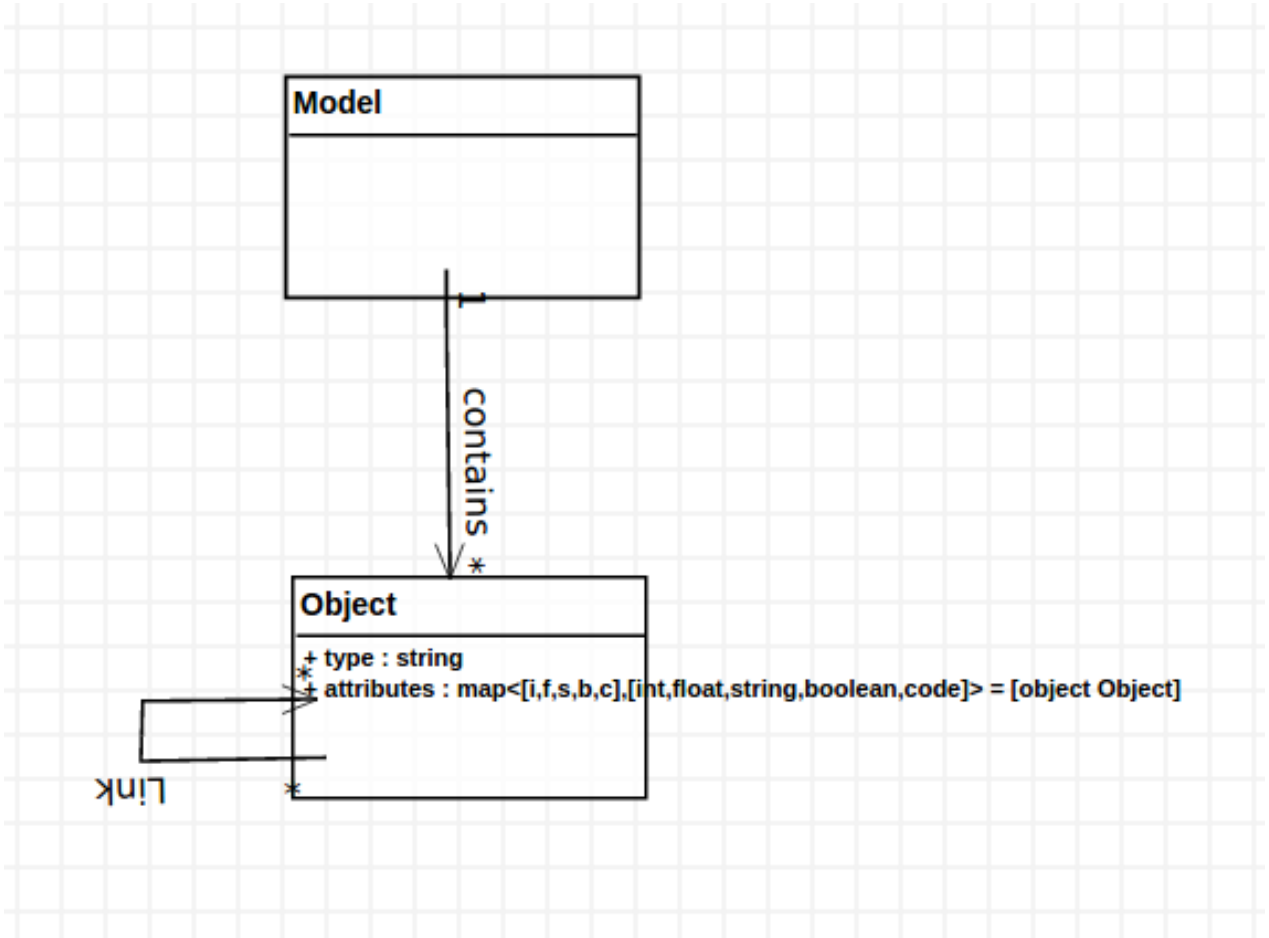
MM genearation in AToMPM [Syriani et al., 2013]

Model to meta-model generation in 7 steps:

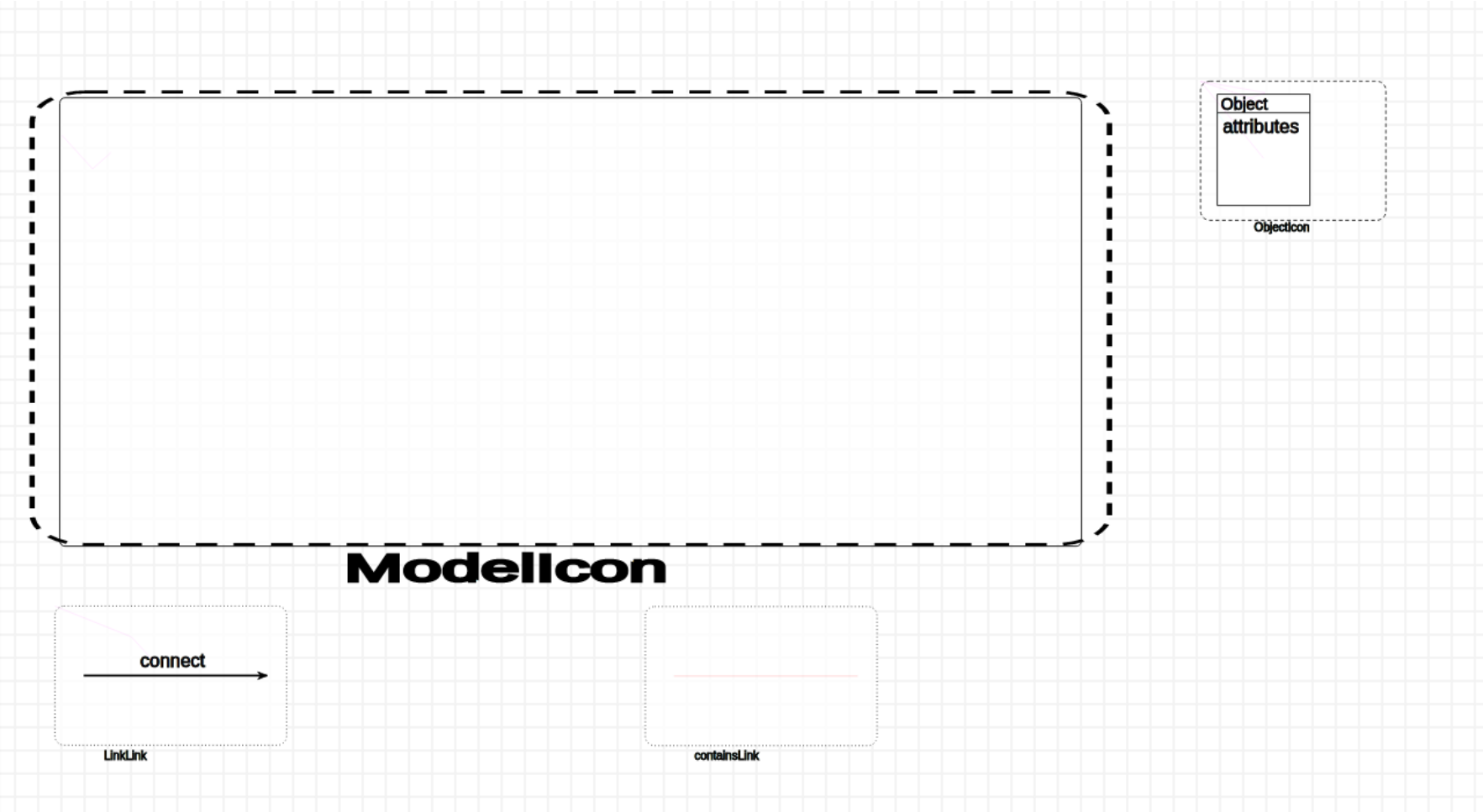
1. Generic MM
2. Create example models
3. Model transformations into abstract syntax
4. Manually check abstract syntax
5. Default concrete syntax generation
6. Manually change concrete syntax icons
7. Create models using newly generated MM

Syriani et al. (2013)
AToMPM: A Web-based Modeling Environment

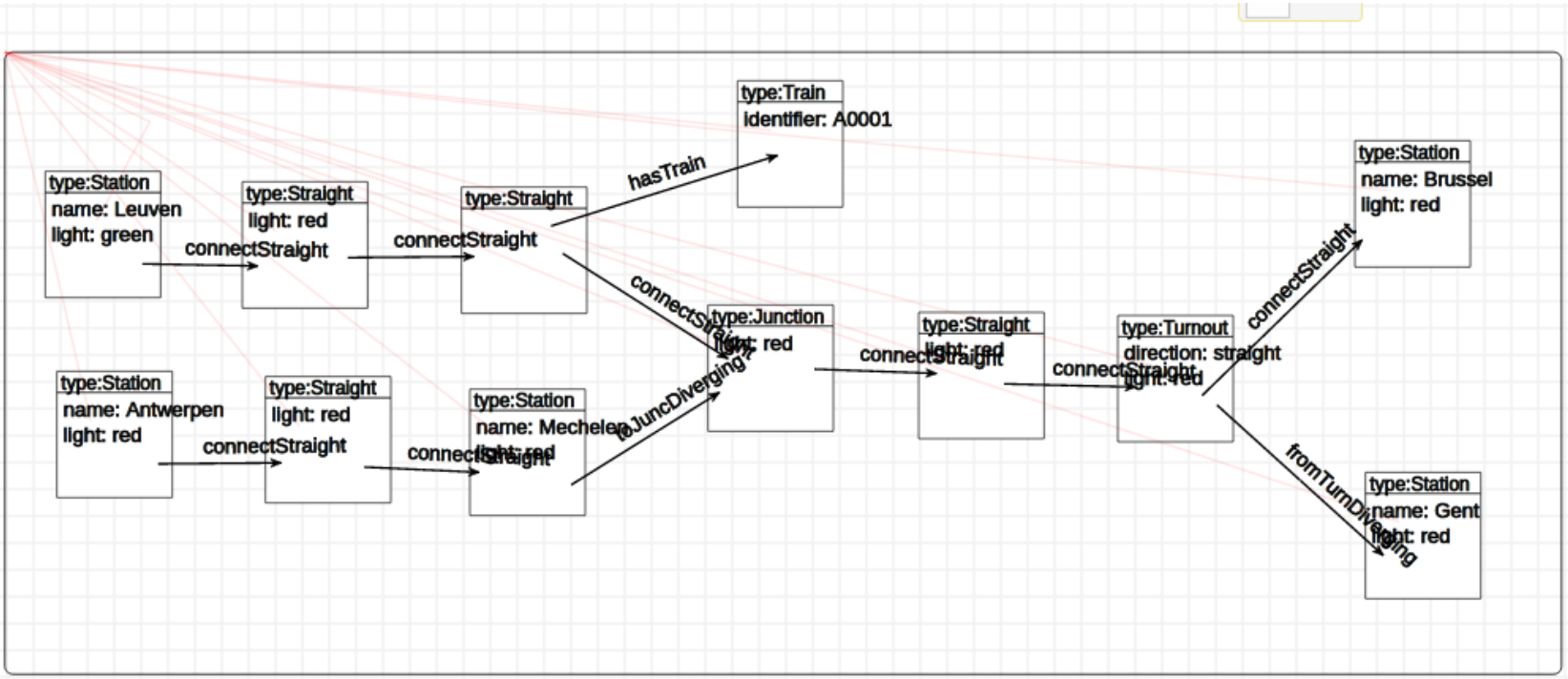
Generic Meta-Model: Abstract Syntax

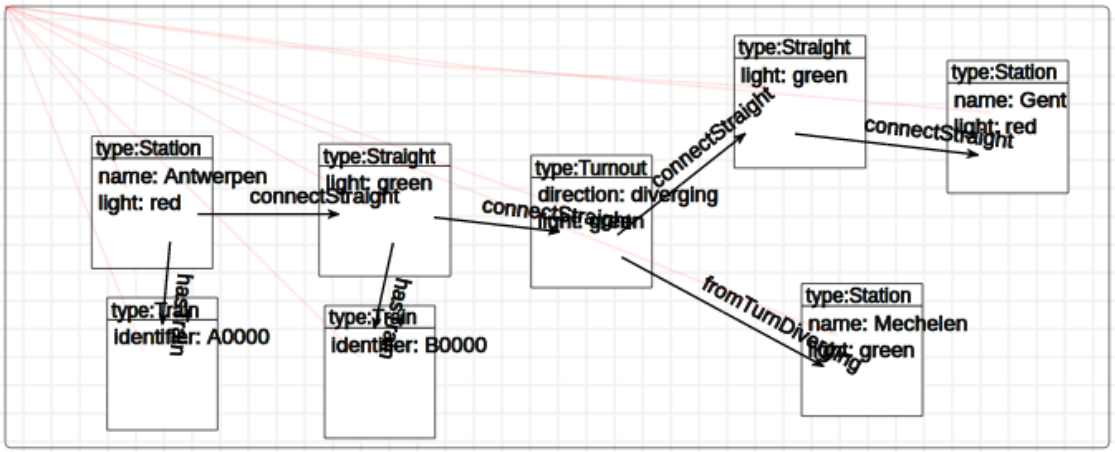


Generic Meta-Model: Concrete Syntax



Create Example Models

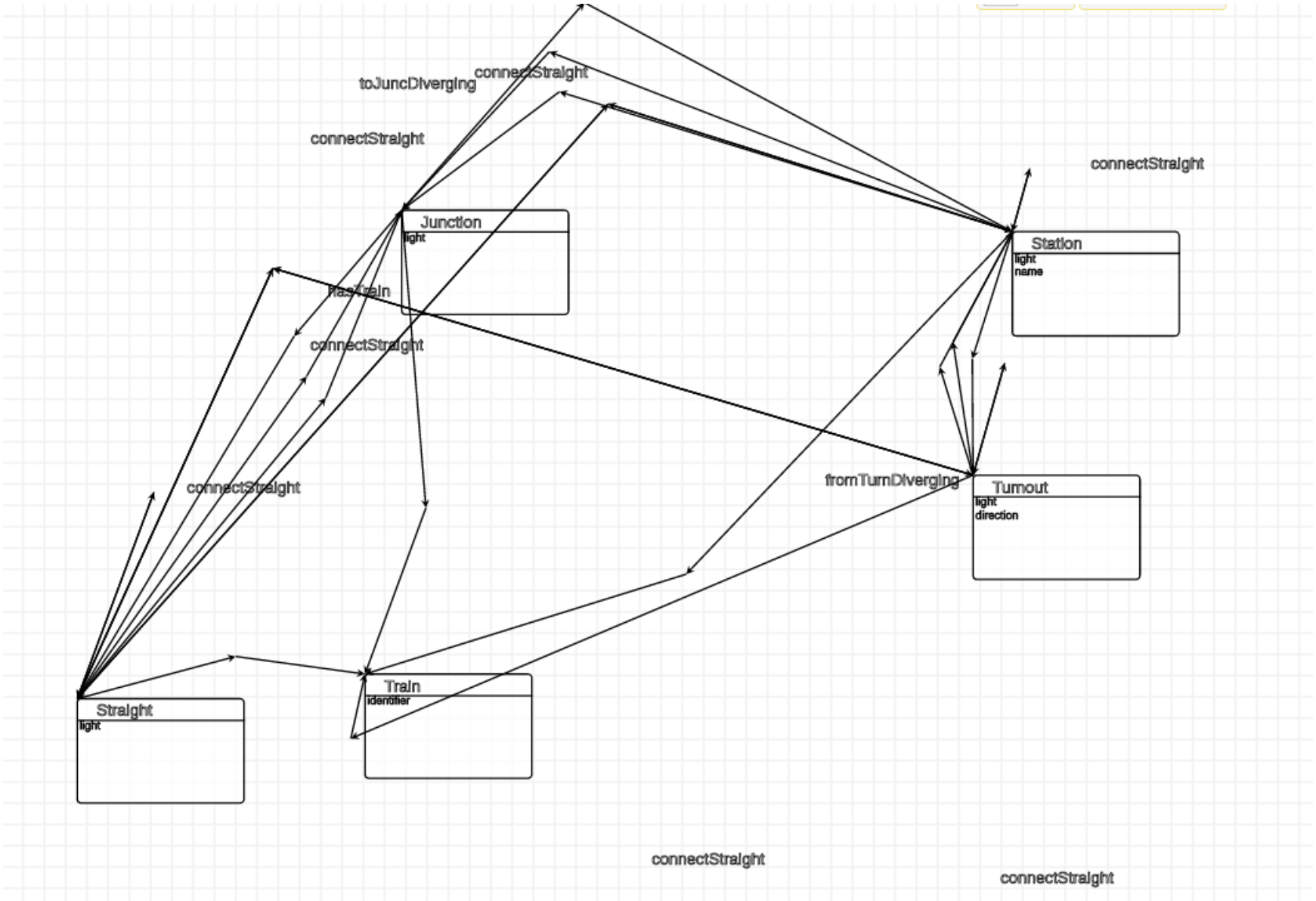




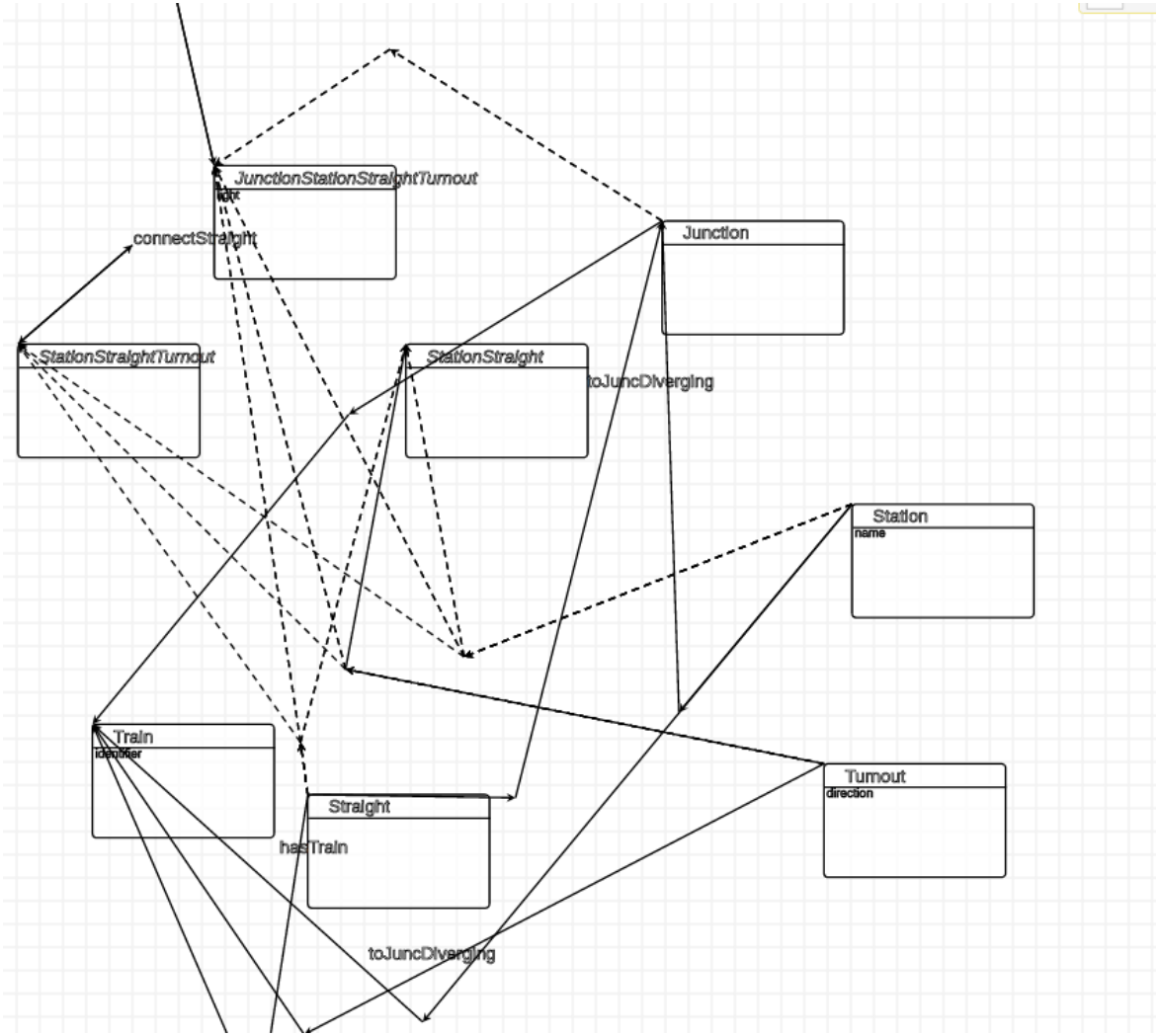
Model transformations into abstract syntax

1. Create Classes
2. Merge Classes
3. Create Associations
4. Count Cardinalities
5. Merge Associations
6. (optional) Create Super Classes
7. Remove Original Sample Models

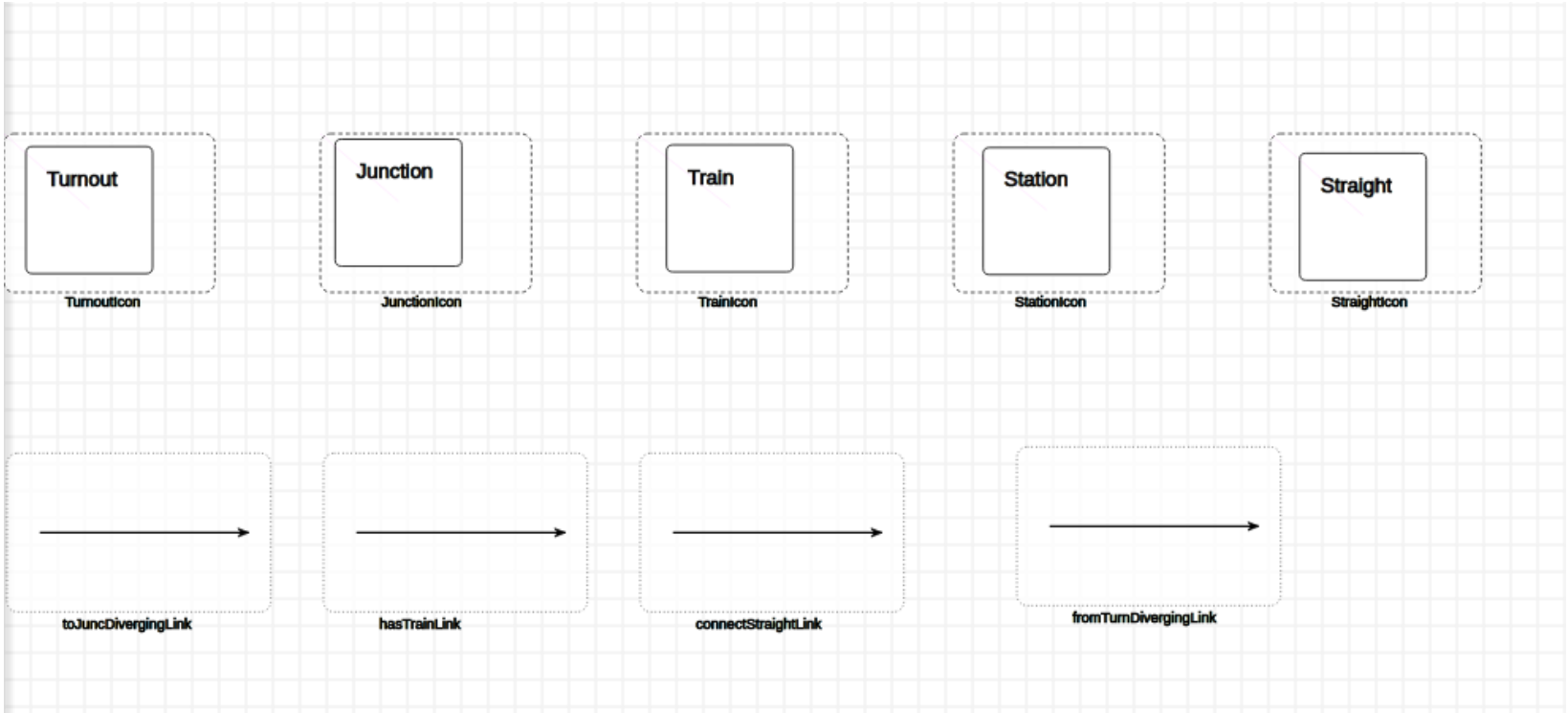
Model transformations into abstract syntax



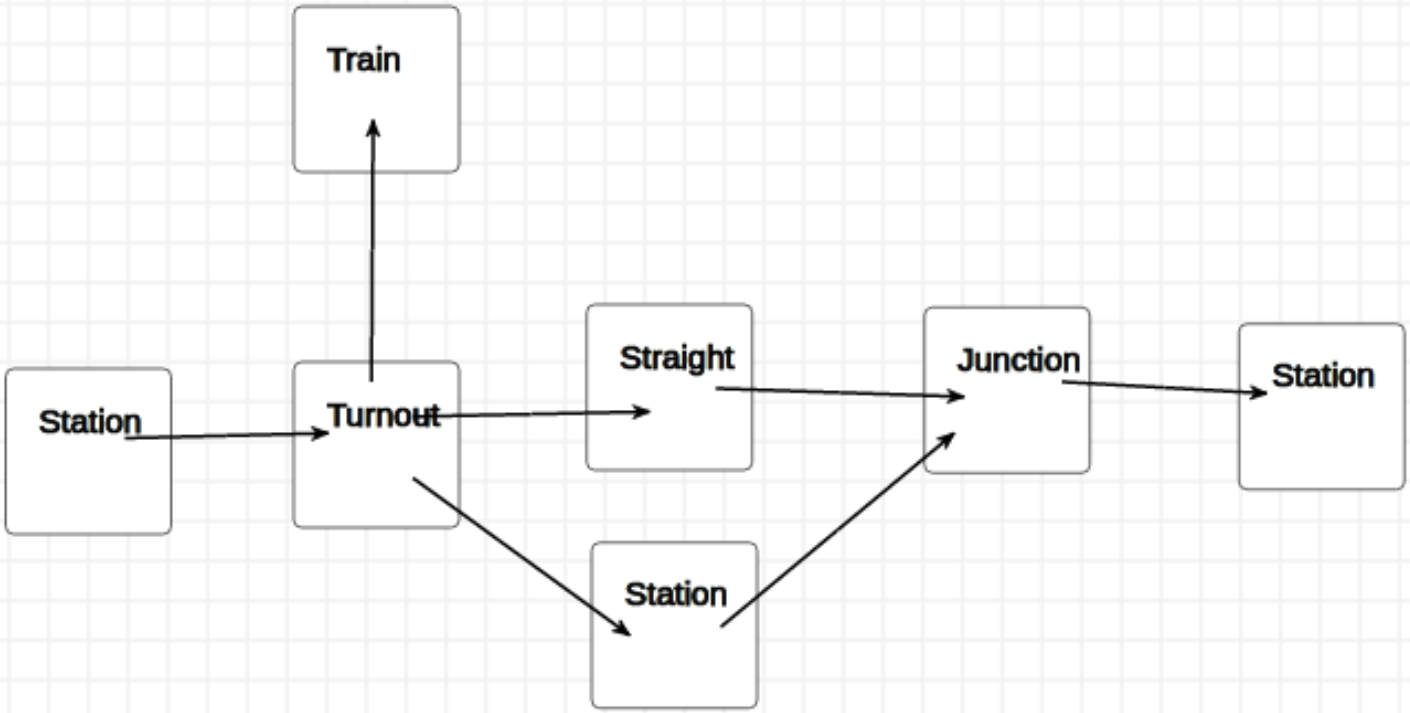
Model transformations into abstract syntax with inheritance



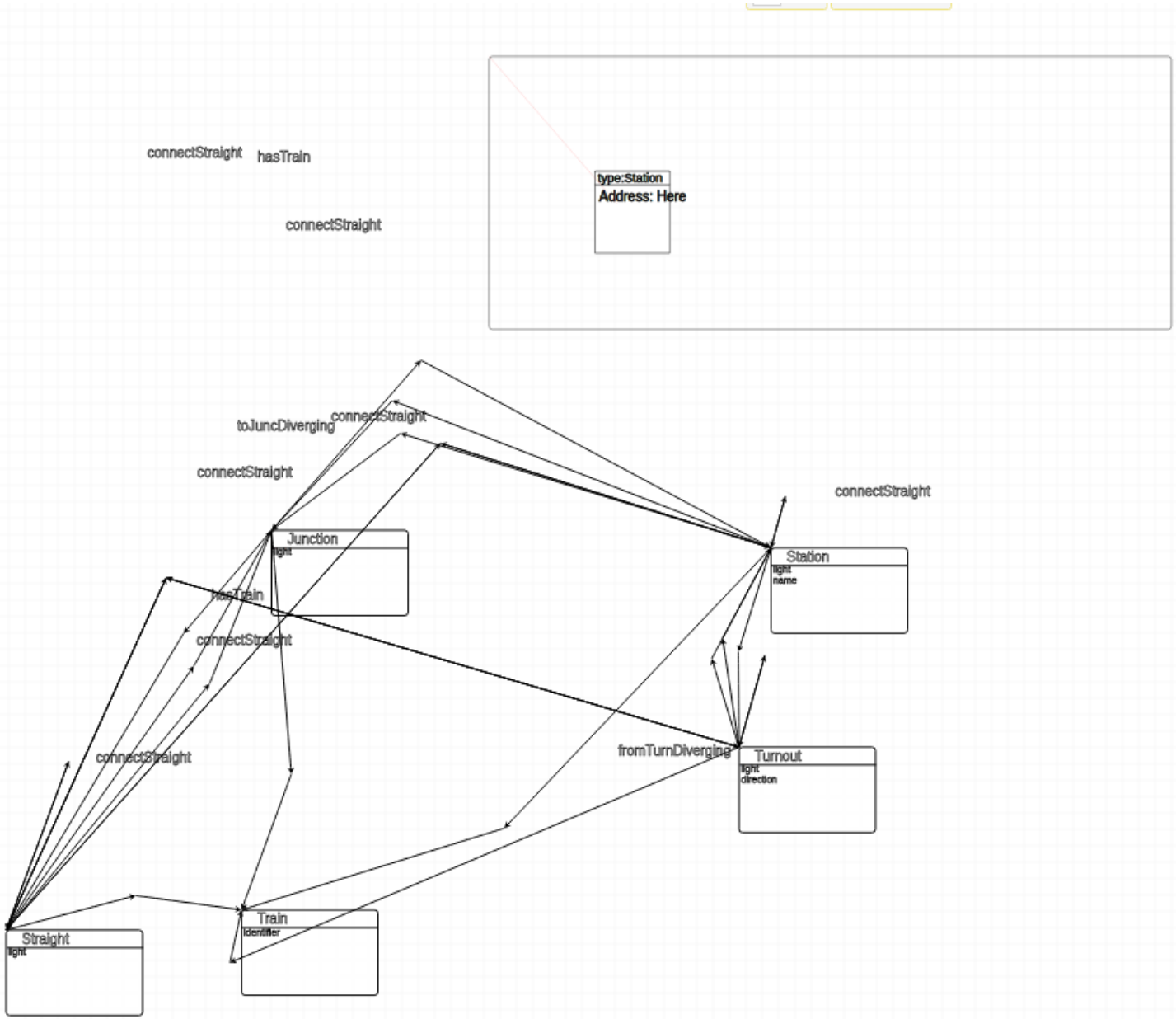
Default concrete syntax generation



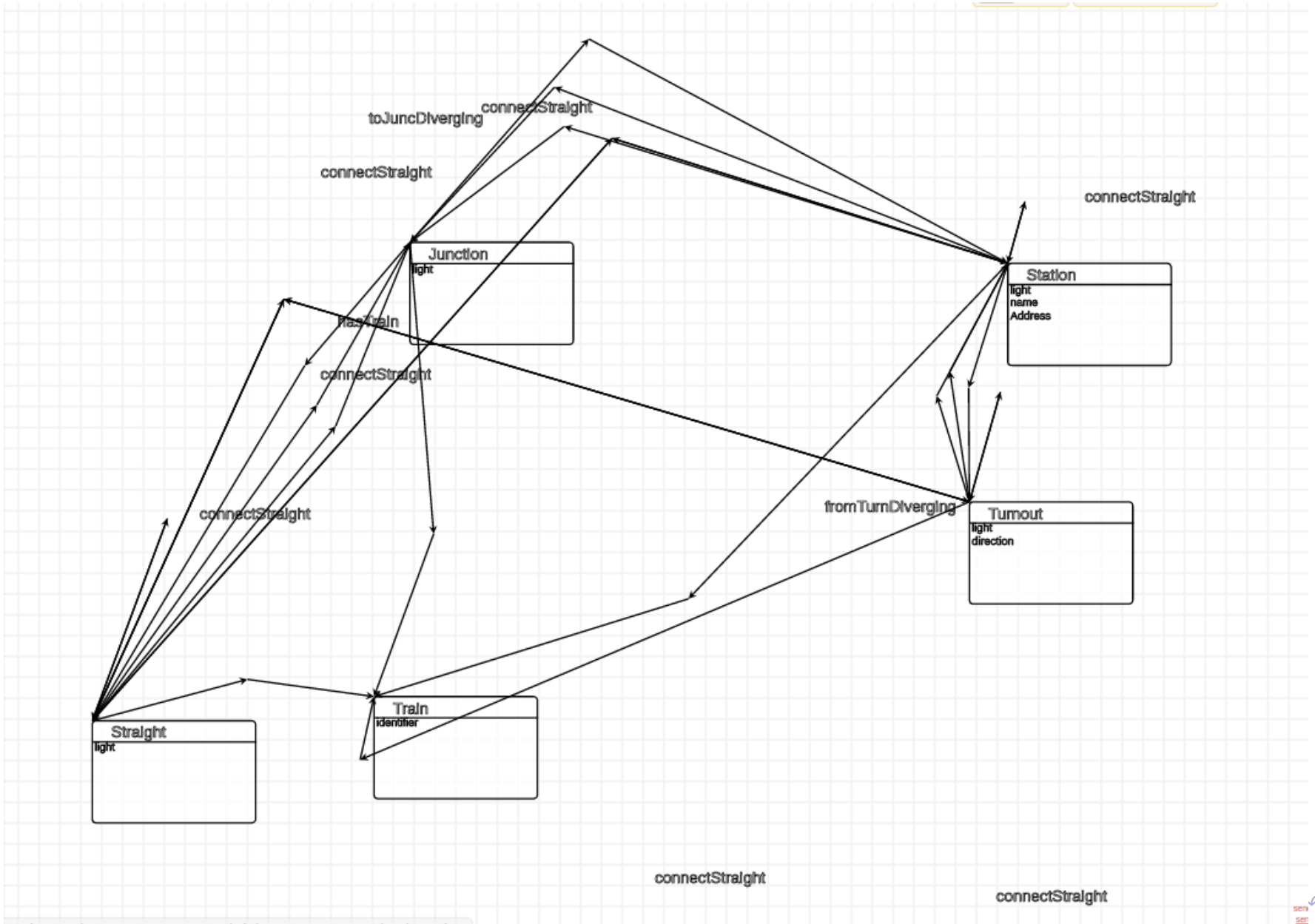
Create models using newly generated MM



Update current MM



Updated MM


toJuncDiverging
connectStraight
connectStraight
connectStraight
Junction
light
Station
light
name
Address
connectStraight
connectStraight
connectStraight
fromTurnDiverging
Turnout
light
direction
Straight
light
Train
identifier
connectStraight
connectStraight

Demo

Conclusion

- related work, focus on MM-induction phase
- proposed approach
- usage

Questions?