

Model-Driven Development of Text Adventures

Text adventure creation made simple - Create the eighties game you always wanted, with modern technology¹

Tobias Franz, Tilman Stehr, Gil Engel {tobias.franz, tilman.stehr, gil.engel}@tu-braunschweig.de

Created as part of the Lecture Model-Driven Software Development

Braunschweig University of Technology | Institute of Software Engineering and Automotive Informatics

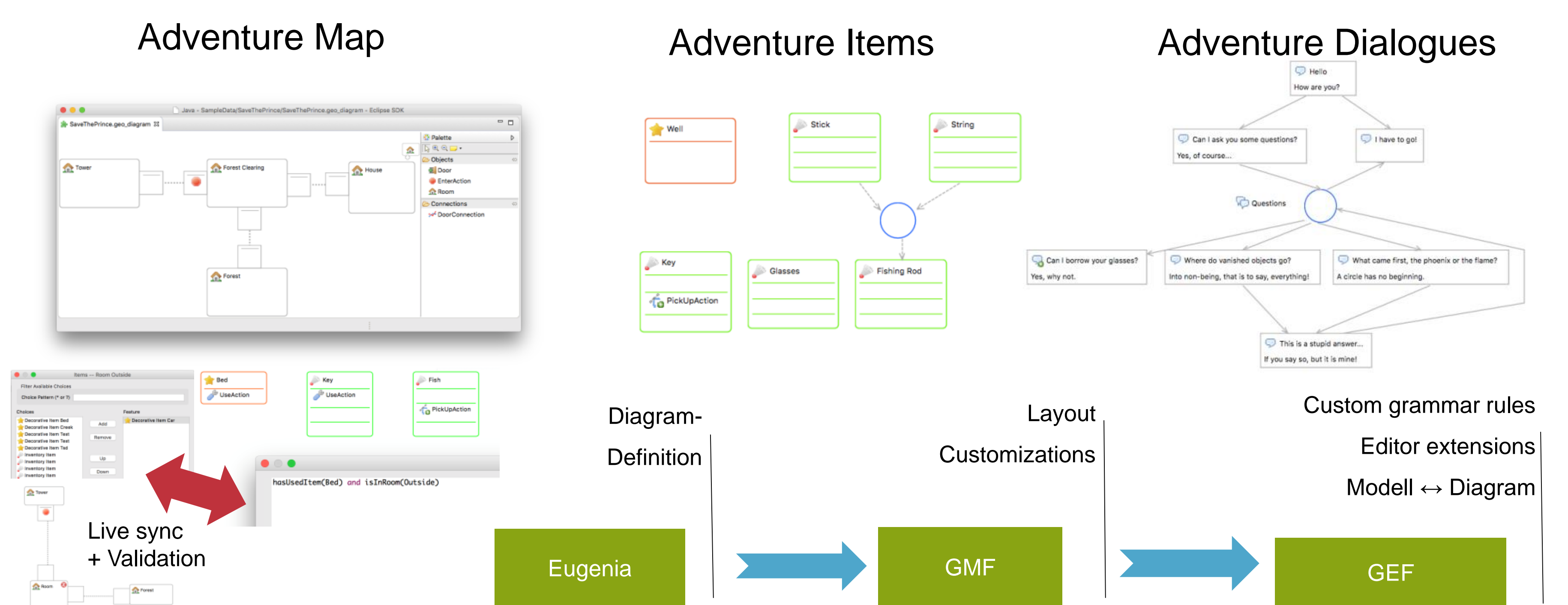
Why Text Adventures?

- „Interactive Fiction“
- Only fantasy necessary to create an adventure
- Player can visualize the world him or herself

Why Model-Driven?

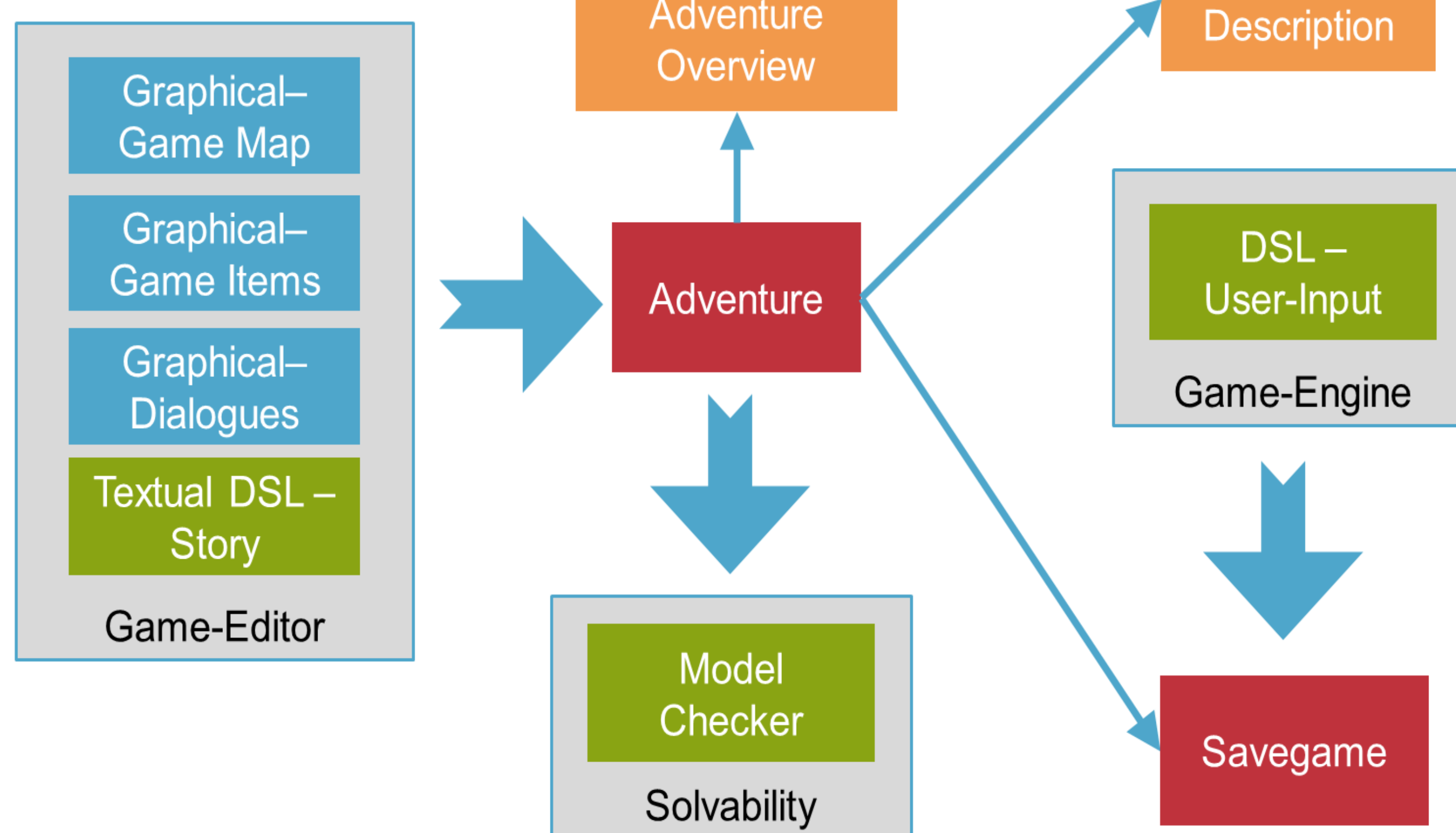
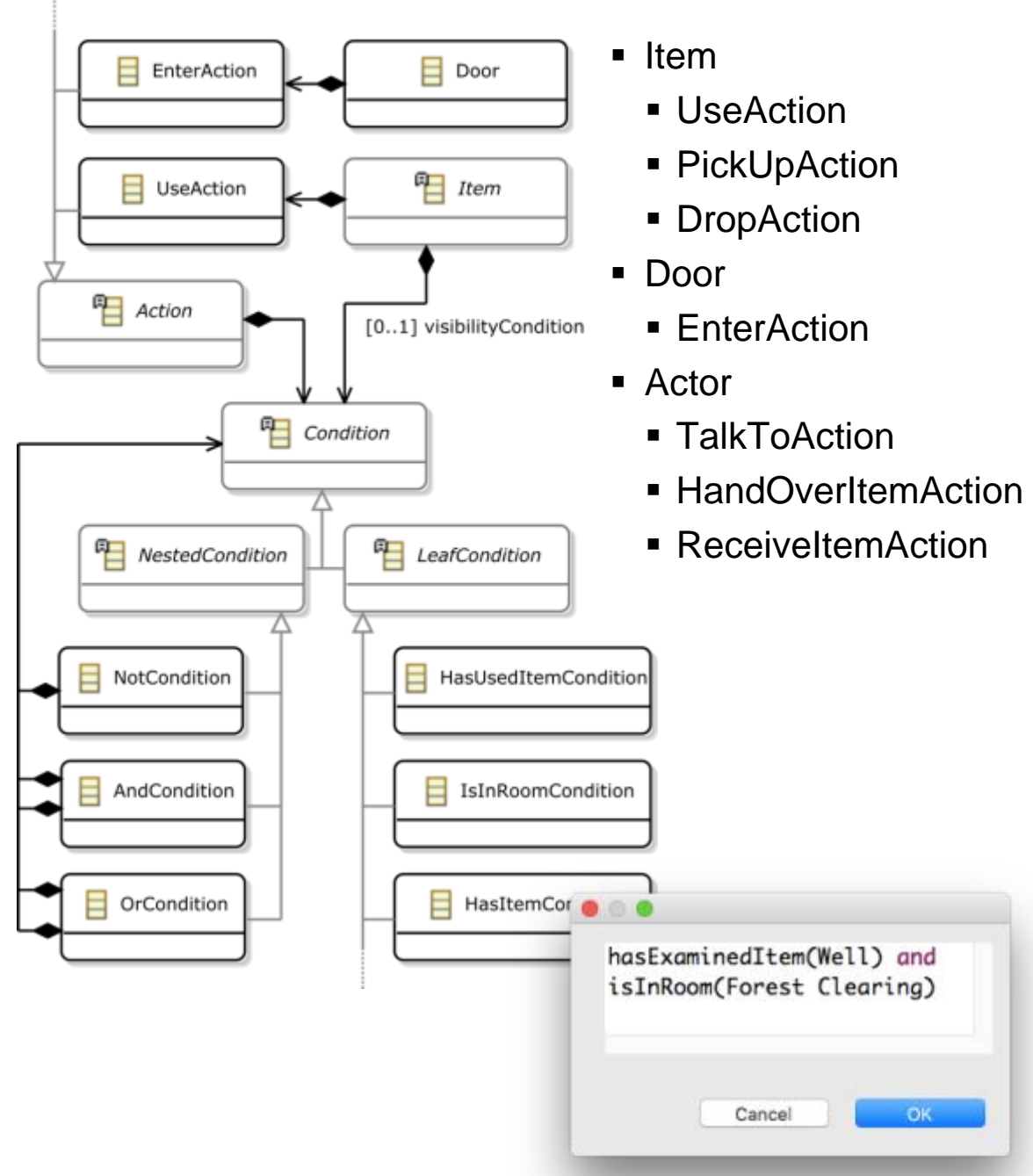
- It is hard to oversee an adventure's story
- Lots of if-conditions needed to be covered
- Automatic analysis and validation

Adventure Environment Editors



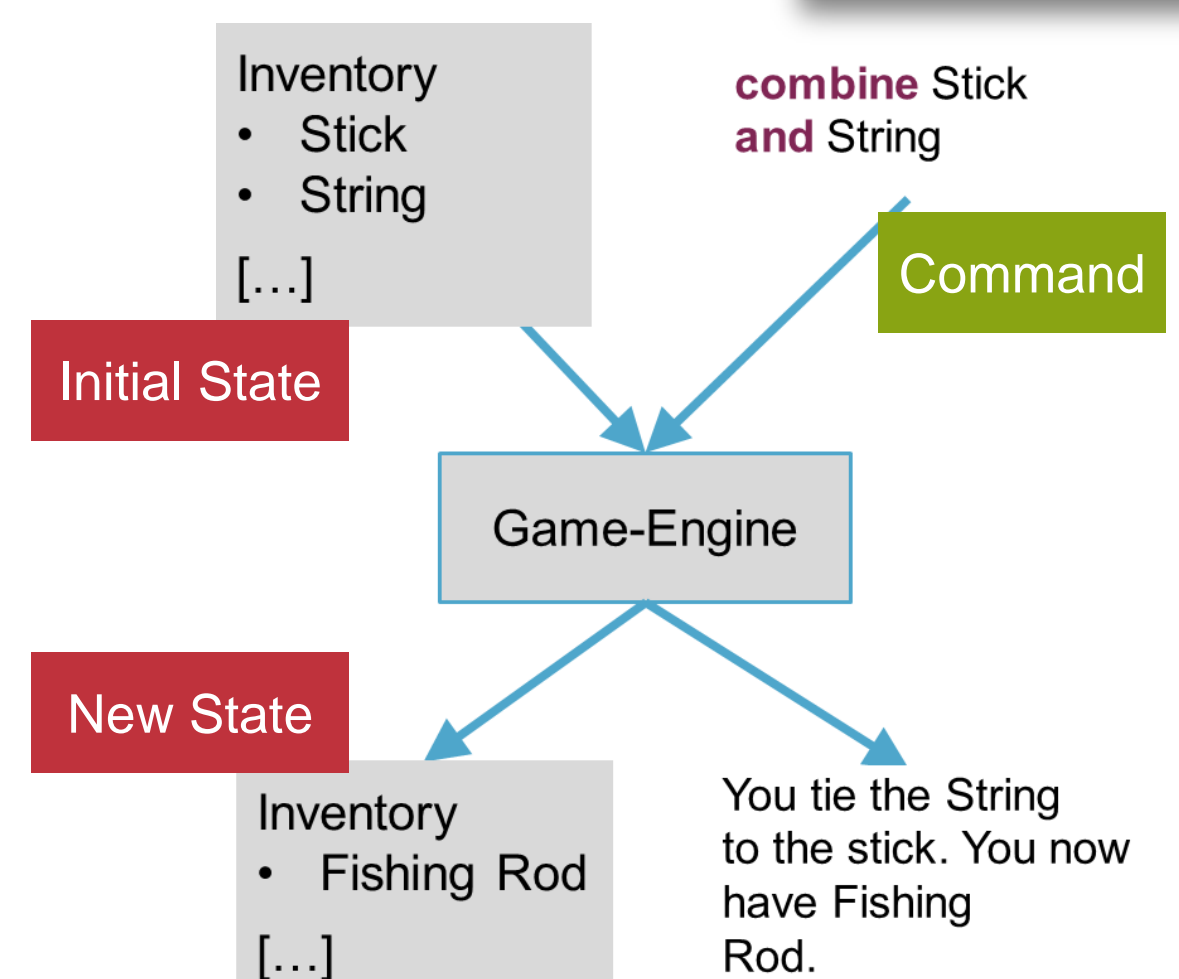
Story Editor

- Embedded Xtext editor
- Description of game conditions & actions



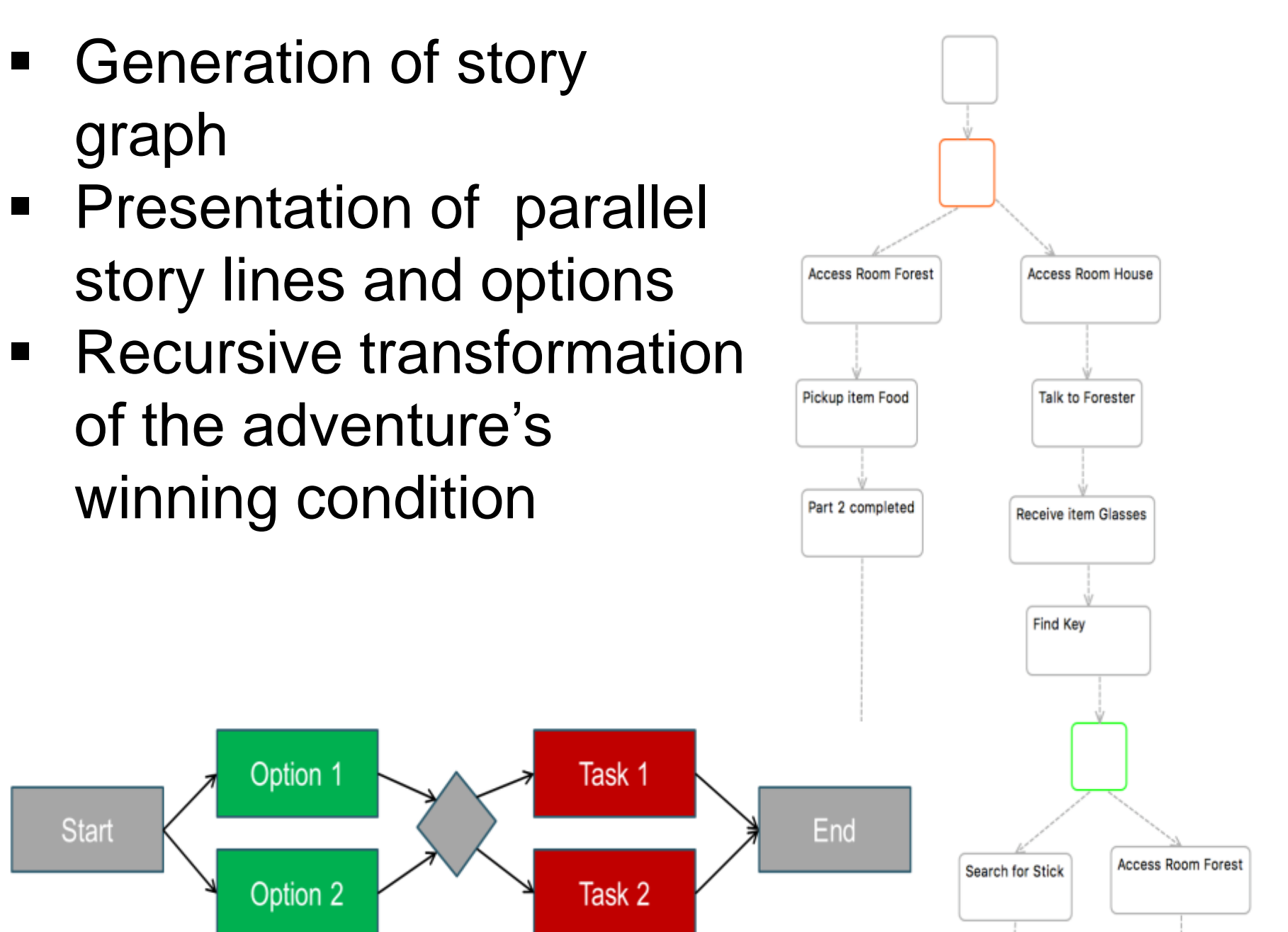
Game-Engine

- Eclipse Xtext editor for savegame model
- Autocompleting and context sensitive suggestions



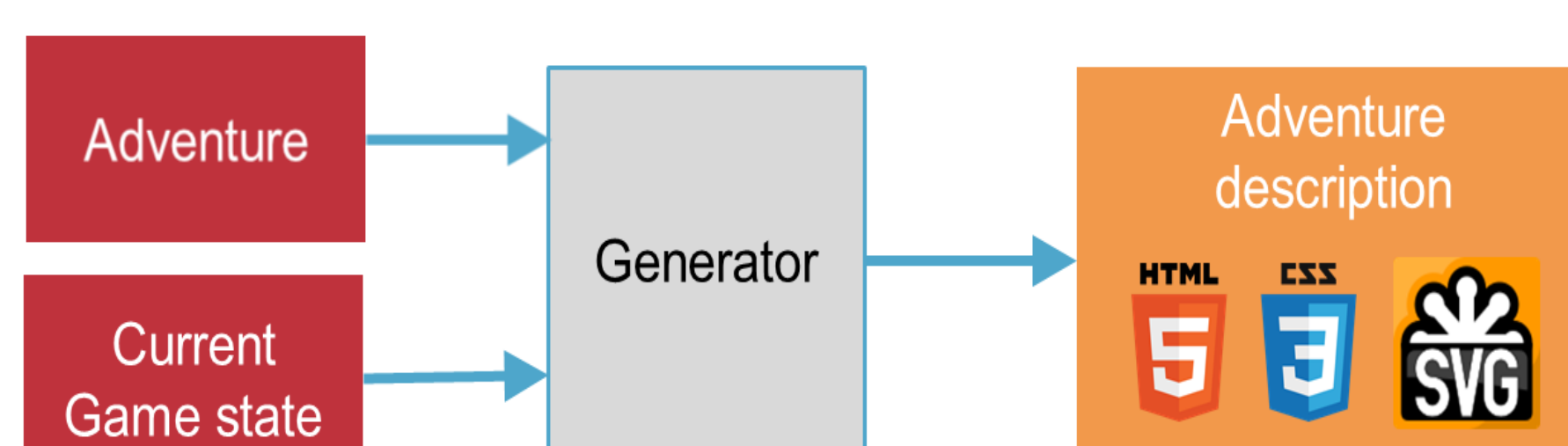
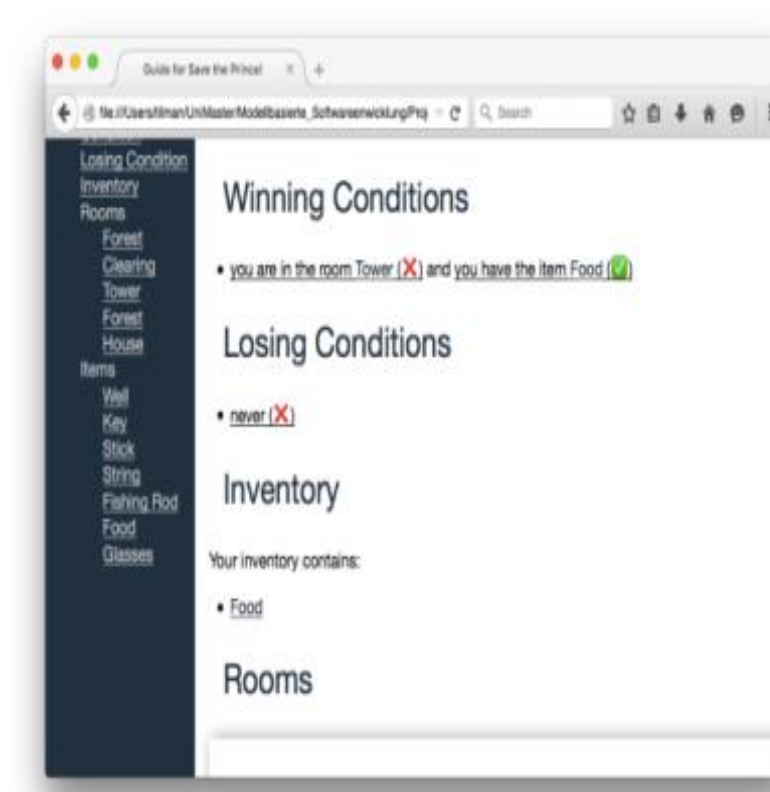
Generated Adventure Overview

- Generation of story graph
- Presentation of parallel story lines and options
- Recursive transformation of the adventure's winning condition



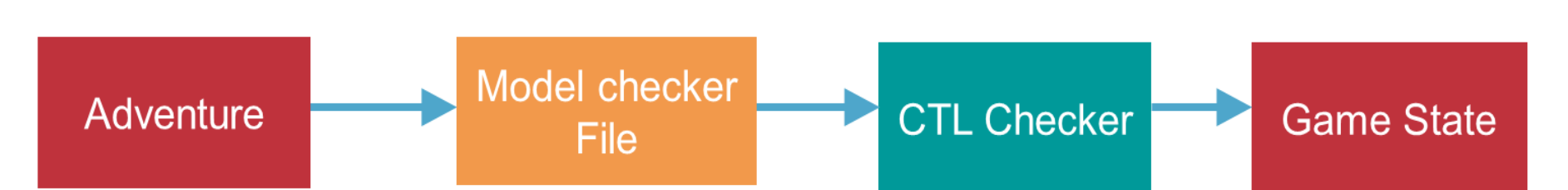
Generated Adventure Description

- Generation of HTML-Handbook describing the adventure's map, items and interactions
- Considering also the current savegame – What is left to do?



Game Solvability

- Adventure is validated by a Computation Tree Logic (CTL) Checker
- Transformation of adventure model to valid model checker input file
- Adventure editors trigger checker as a background process
- If model is not solvable, the checker returns an example as reason



¹ <https://textadventure.tilman.ninja>