AToMPM: A Tool for Multi-Paradigm Modelling

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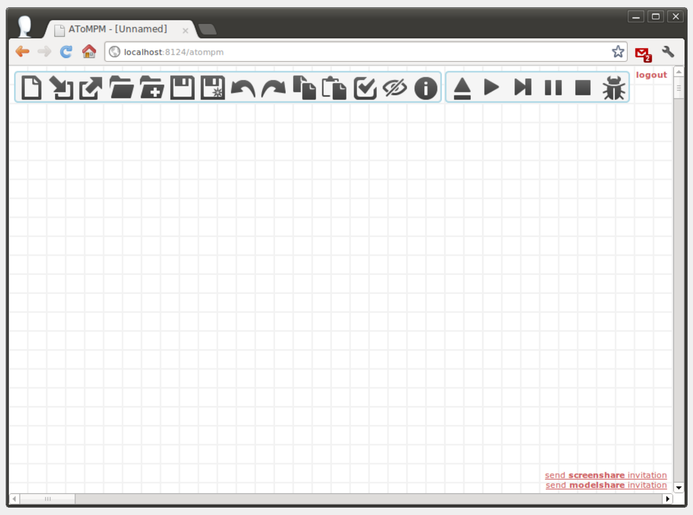
Purpose and Objective

AToMPM is a modern, versatile and theoretically sound **Multi-Paradigm Modelling environment**. That is, an environment for the modelling of any and every part of a system, at the most appropriate level(s) of abstraction, using the most appropriate formalism(s). In AToMPM, **everything is modelled**.

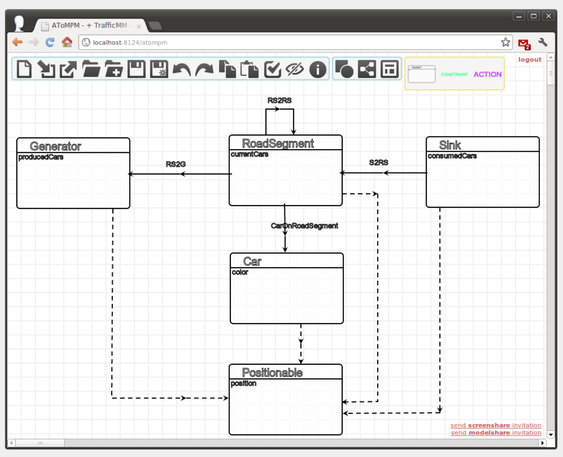
Features and Interface



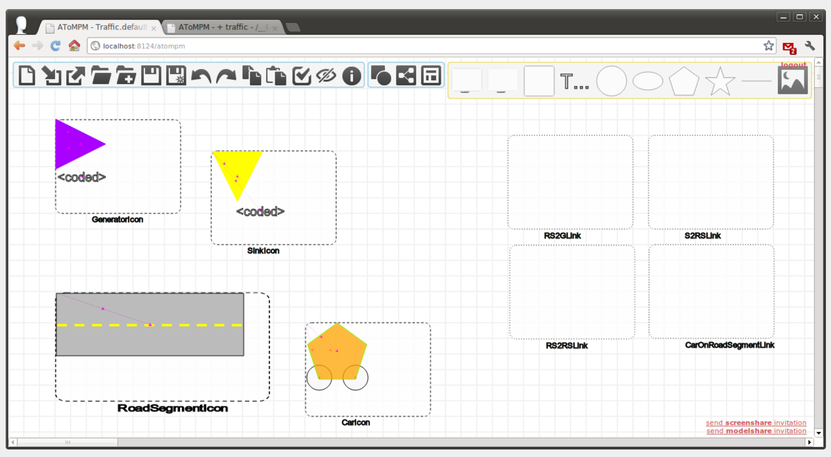
- Runs in a **Web browser**[a].
  → No local installation required.
- Stores user **data online**.
  → Access your personal data and settings from anywhere.
- Supports real-time, distributed, **collaboration**.
- Highly **extensible**
  → Easily add your own toolbars, formalisms, and more.
- Supports **undo-redo** and **copy-paste**.
- Supports **multiple concrete syntaxes** per formalism.
- Supports Higher-Order Transformations (**HOTs**).
- Supports transformation **stepping**, **pausing**, **breaking**.

[a] Currently supports Webkit (e.g., Chrome, Safari) and Gecko browsers (e.g., Firefox)

Specifying Formalism Syntax (with models)

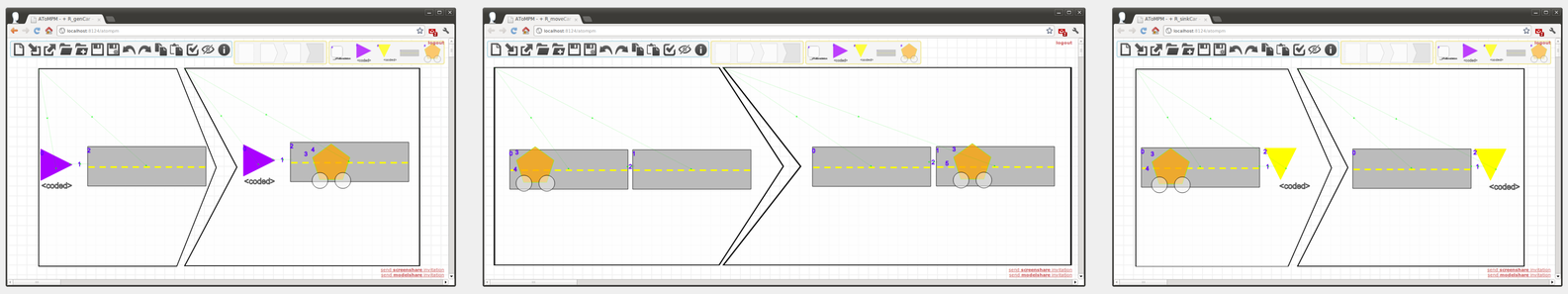


An **abstract syntax model** of a simple traffic formalism

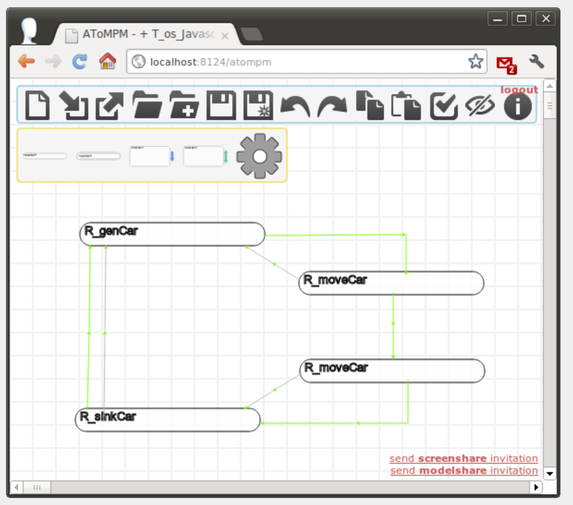


An associated **concrete syntax model**

Specifying Formalism Semantics (with models)



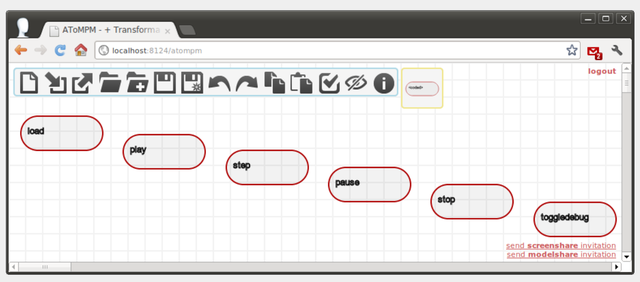
Operational semantics via **transformation rule models**



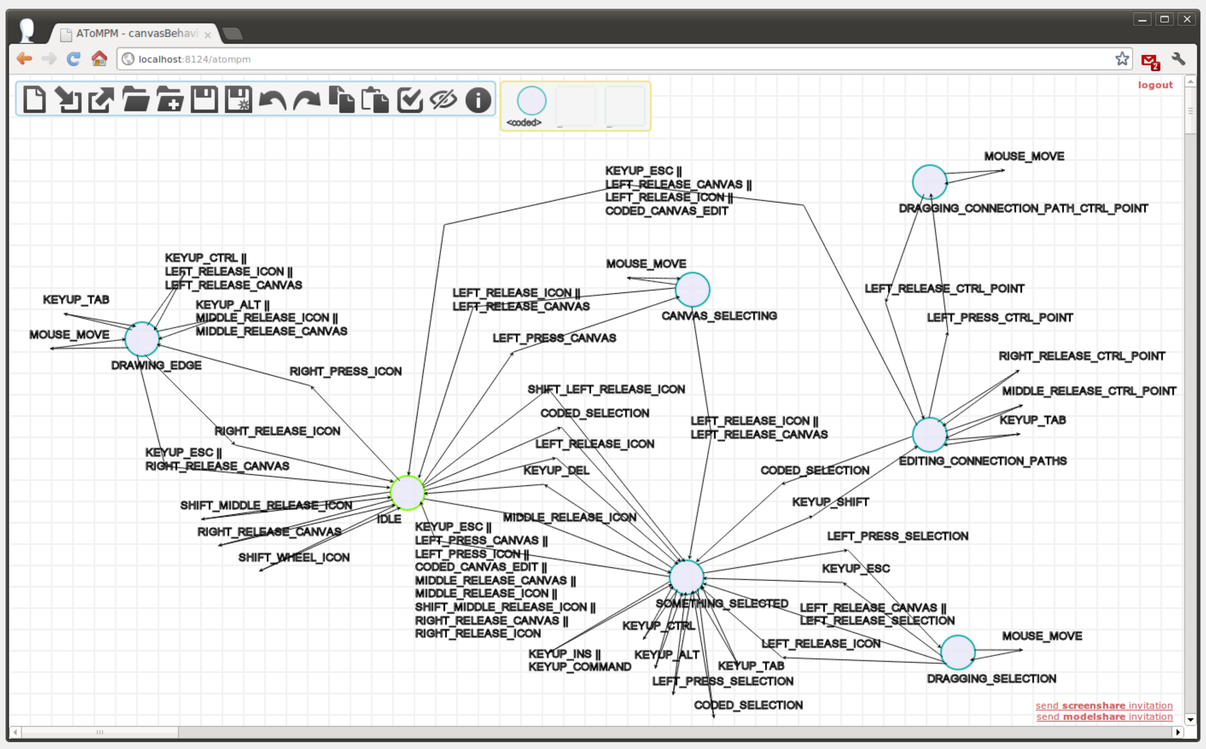
An associated **rule scheduling model**

Specifying Anything Else (with models)

A **model** of a simple traffic network



A **model** of AToMPM's main menu toolbar



A **model** of AToMPM's canvas behaviour

Bibliography

Raphaël Mannadiar. A Multi-Paradigm Modelling Approach to the Foundations of Domain-Specific Modelling. PhD thesis, McGill University, 2012.