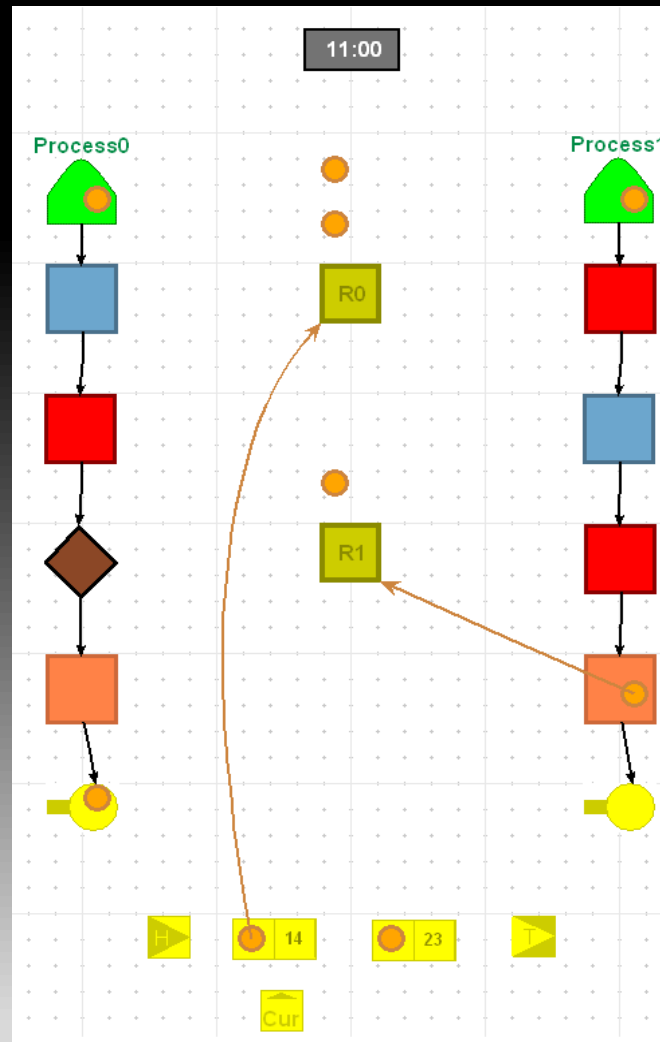
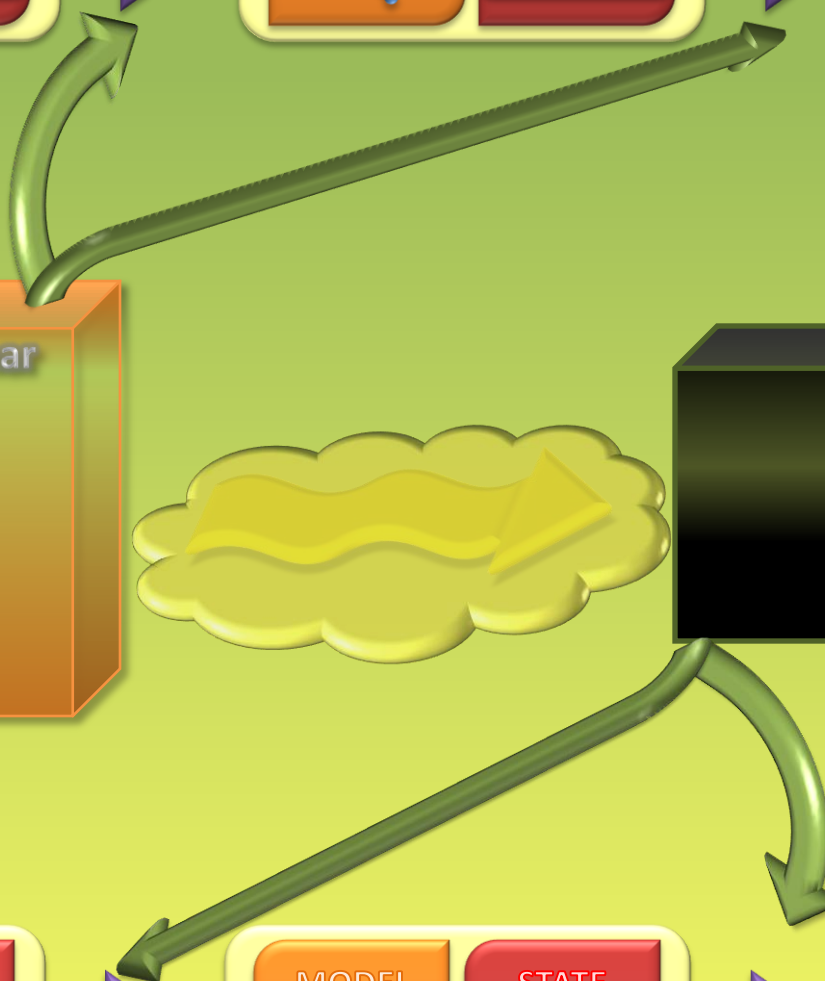
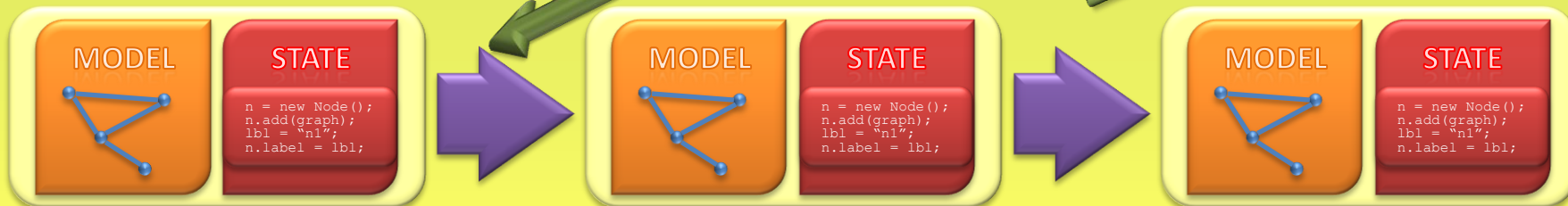
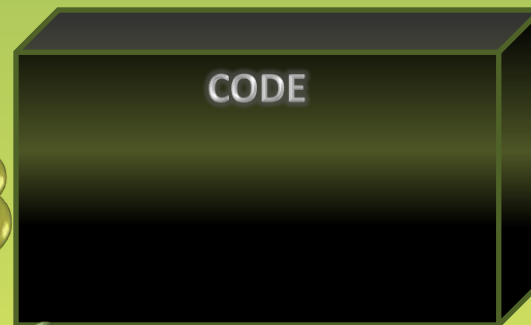
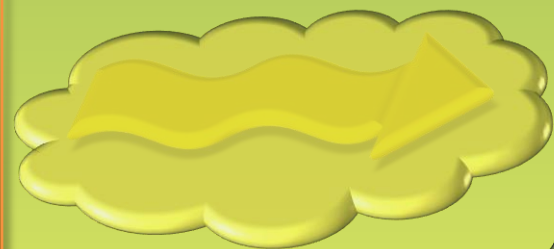
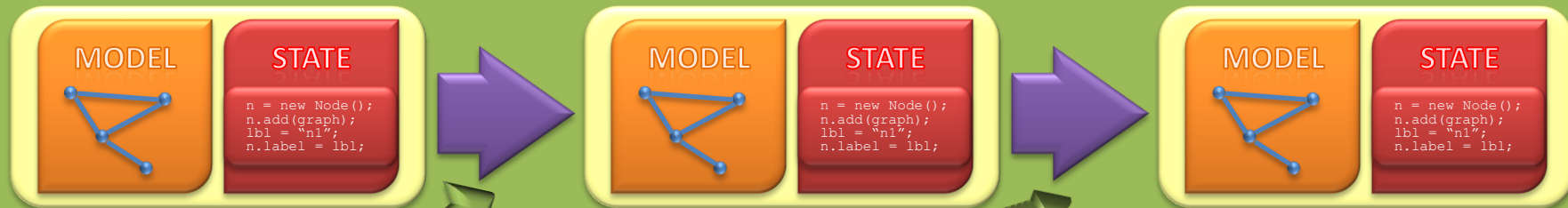


Alternate Pi-Demos Simulators

COMP 522
Project



Presented by
Eugene Syriani



Words on Graph Grammars

- **LHS vs RHS**
- **Execution: Match -> Transform (create + remove + set values)**
- **Denotational vs Operational semantics**



Exit



Block



Generator



Get



Hold



Put



Resource



Transaction



Time



Pointer



Pointee



State



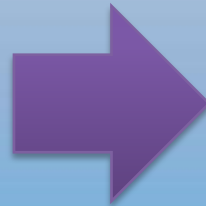
Current

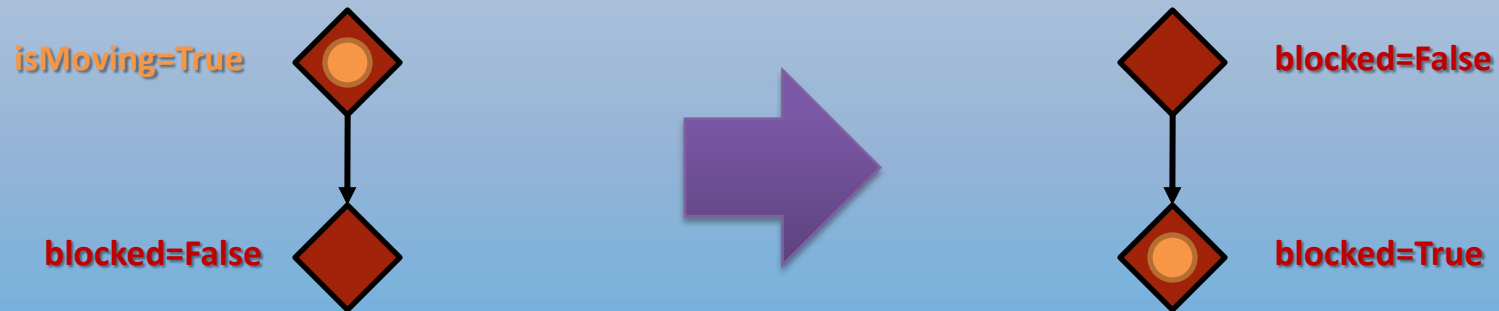
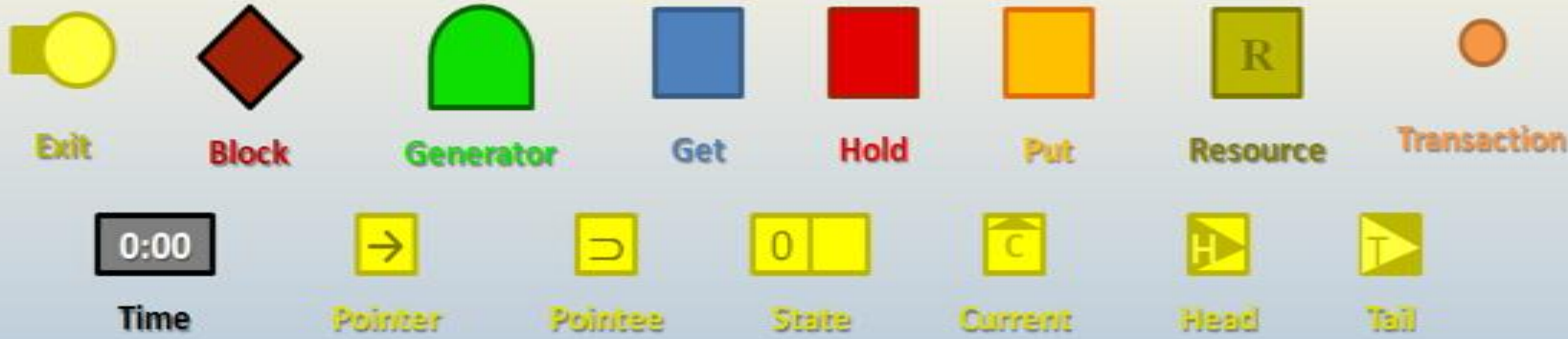


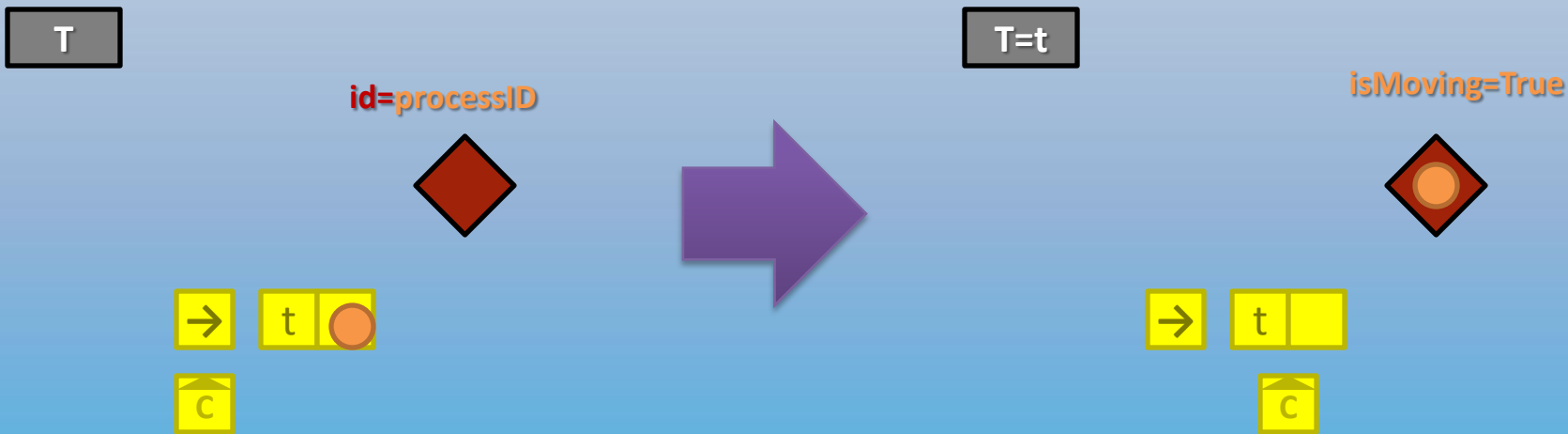
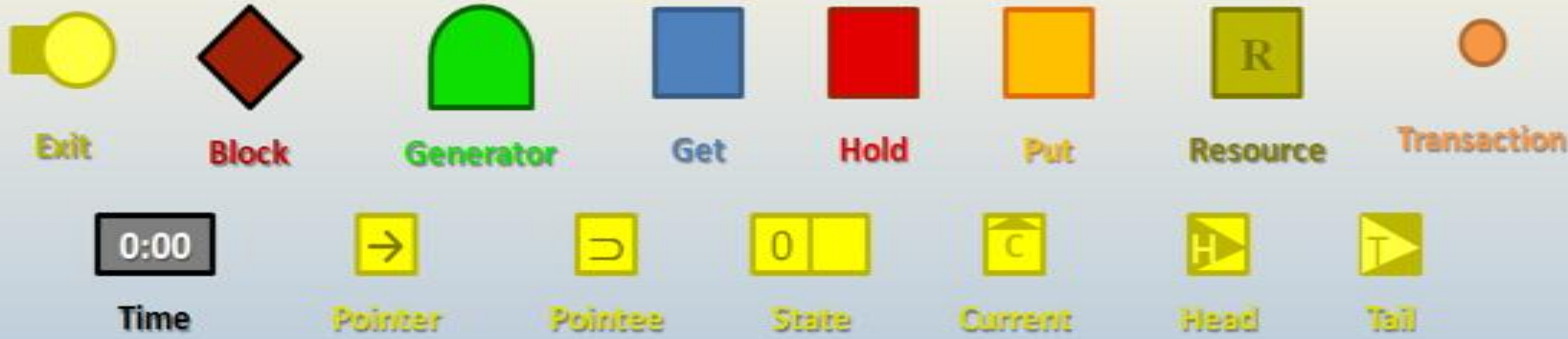
Head



Tail

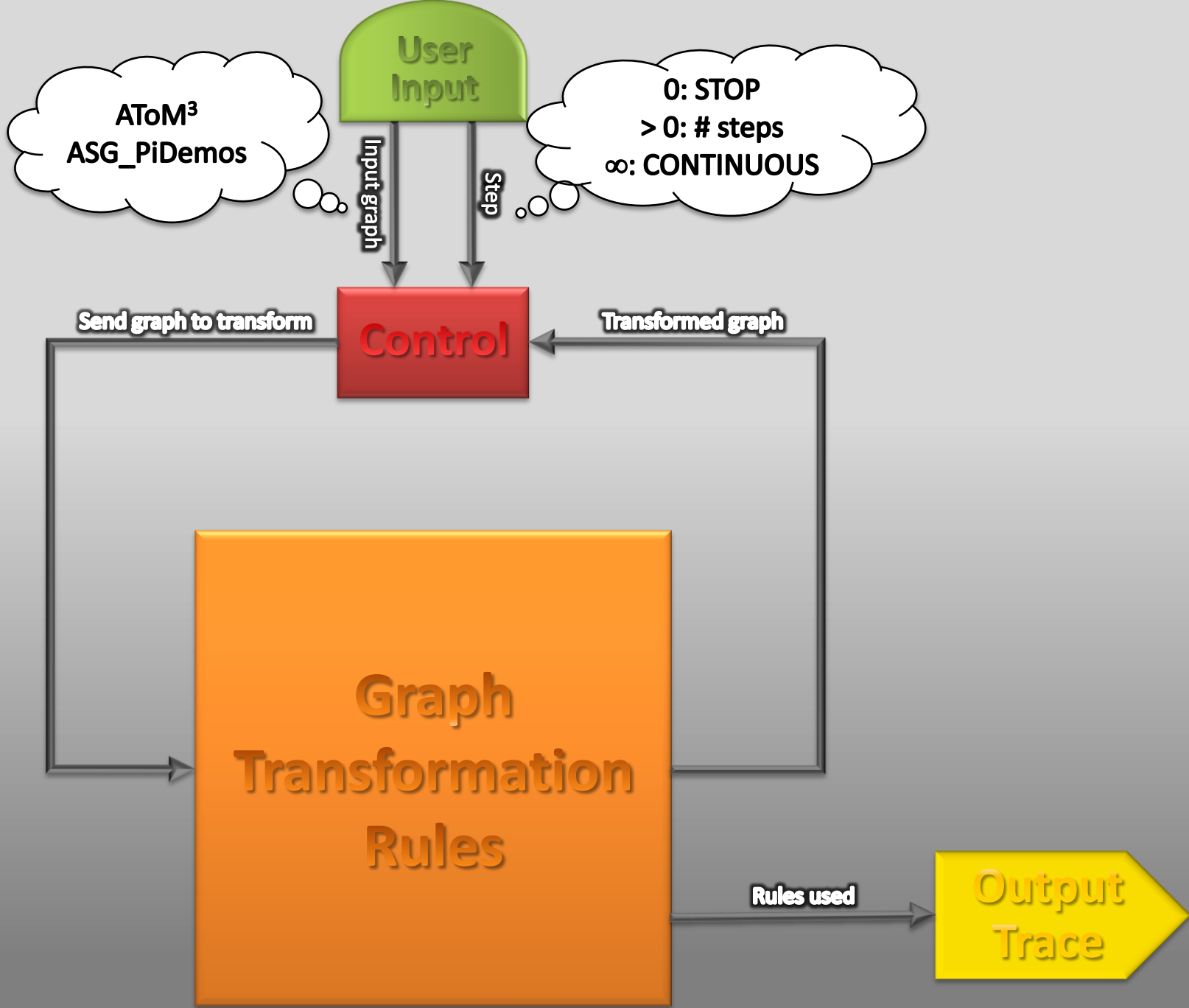


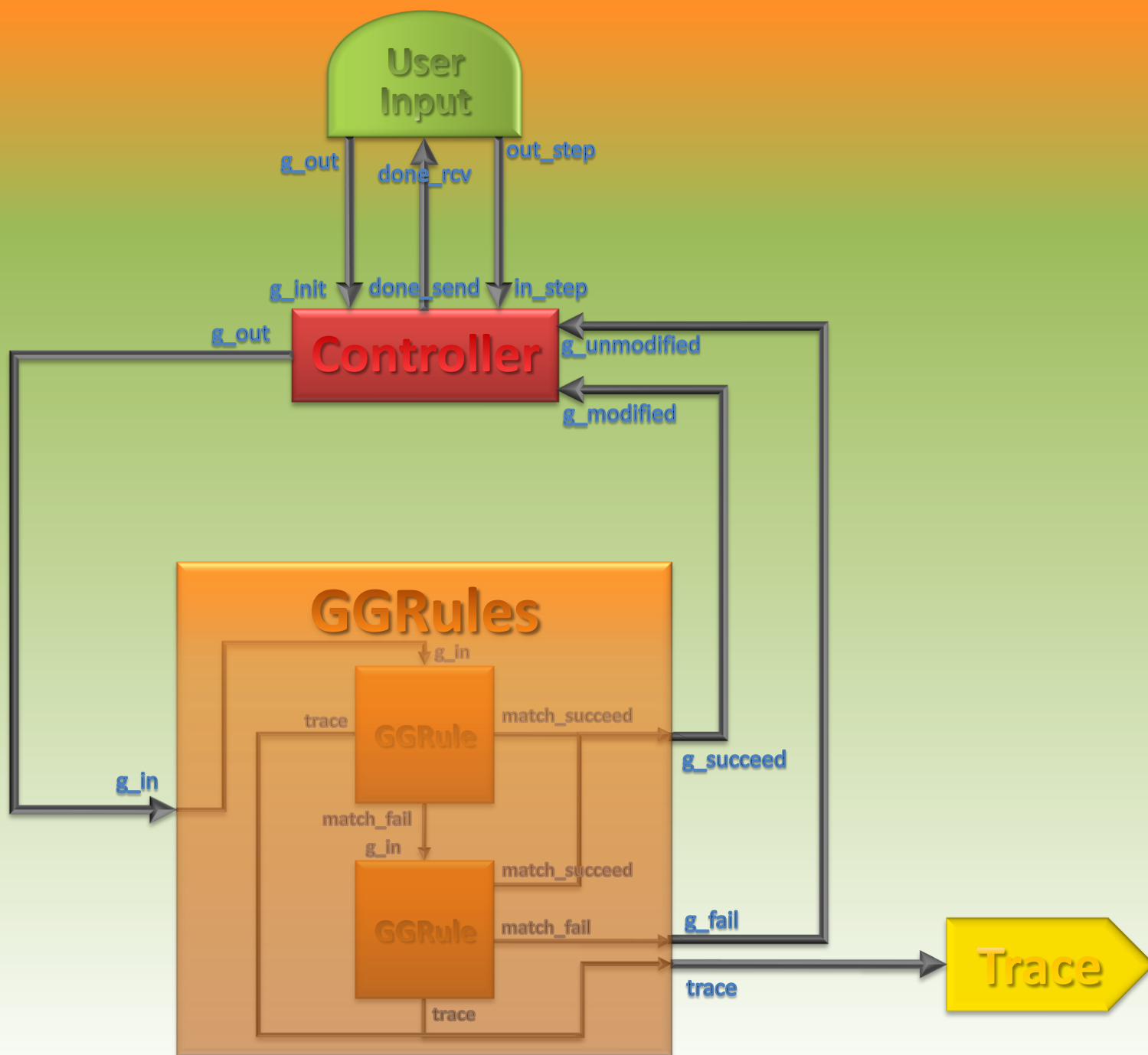




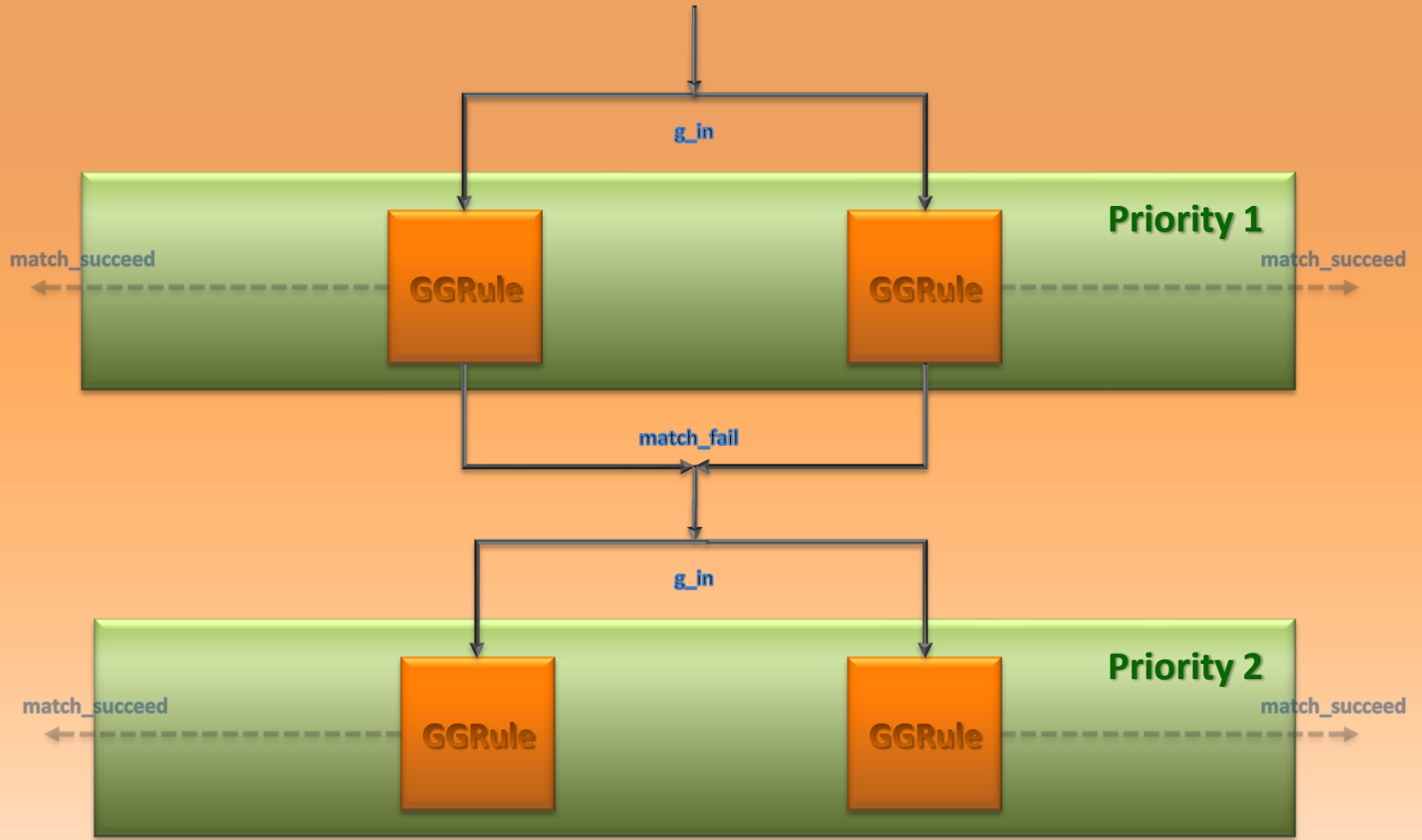
The Operational Semantics

- **Architecture: underlying DEVS system**
- **Design: “plug-in” for AToM³**
 - Modularity of rules
- **Testing: trace comparison**

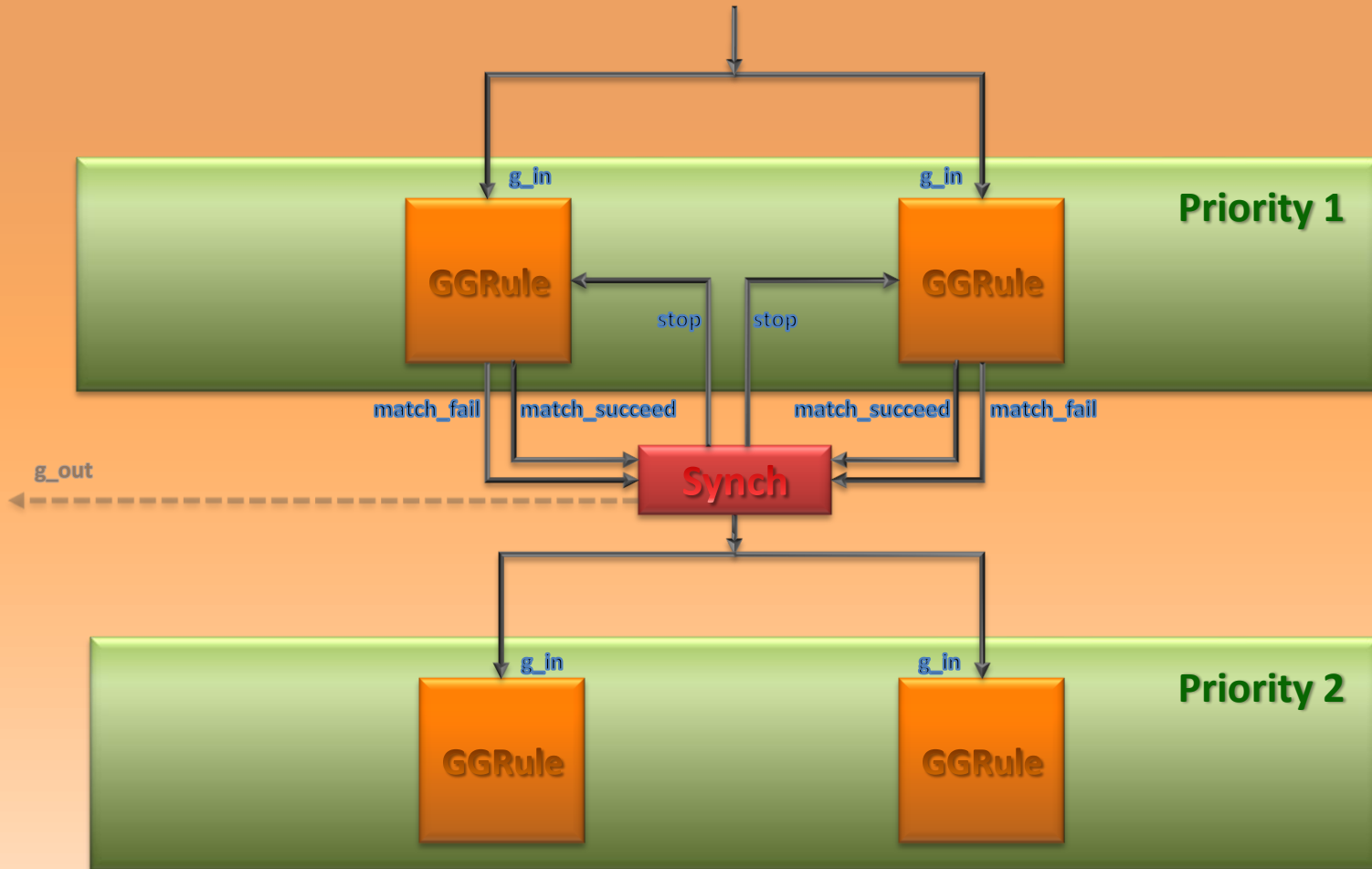




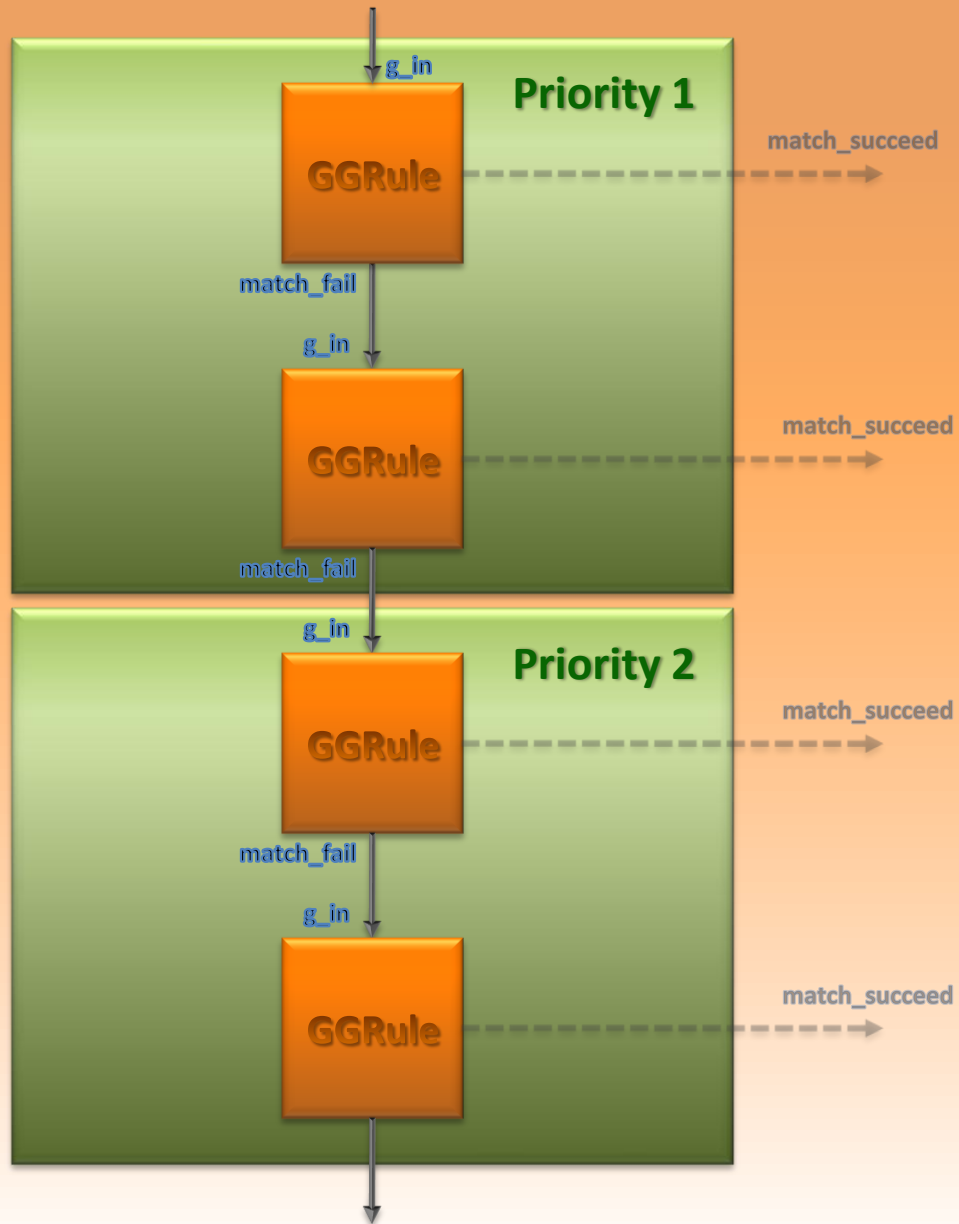
GGRules



GGRules



GGRules



Template-style code for GG

- **Rule: Abstract super-class**
- **Execute method:**
 - Find matching subgraph: get each node, filter for specific attributes, filter by links
 - Transform subgraph: remove nodes, create nodes, set attribute values

Conclusion



I am convinced that it is doable!

References

- Eugene Syriani, *Modelling syntax and semantics of piDEMOS in AToM³*, MSDL Summer Presentations, 2006
- Hans Vangheluwe, *The Discrete Event System specification (DEVS) formalism*, Modelling and Simulation Lecture Notes, 2002
- G. Birtwistle and C. Tofts, *Operational Semantics Of Process-Oriented Simulation Languages --Part 1: piDemos*, 1993
- Modelling, Simulation and Design Lab of McGill, *AToM³*, Nov. 2nd 2006 update