



Systems Realization Laboratory

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Systems Realization Laboratory

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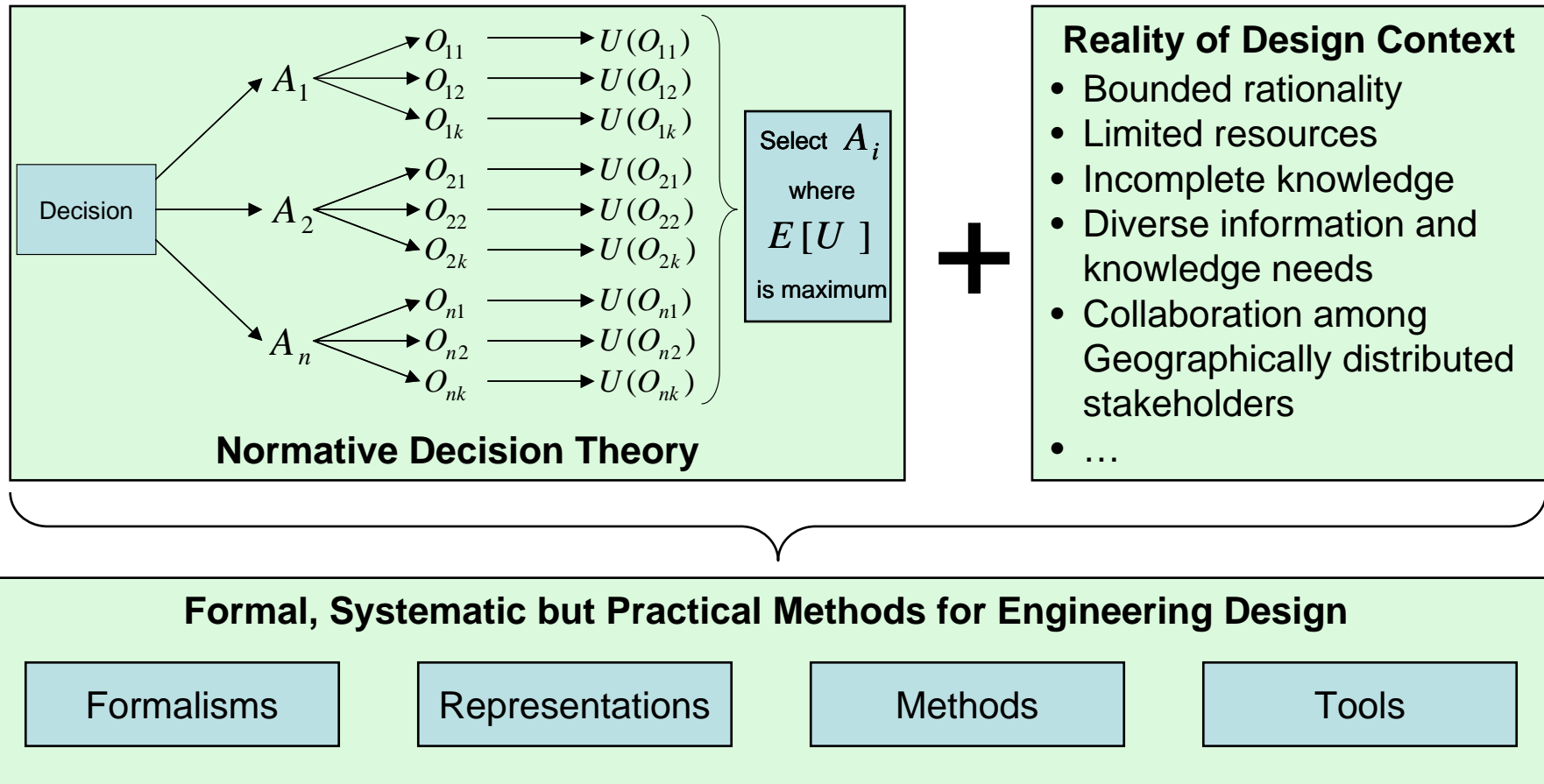
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Past

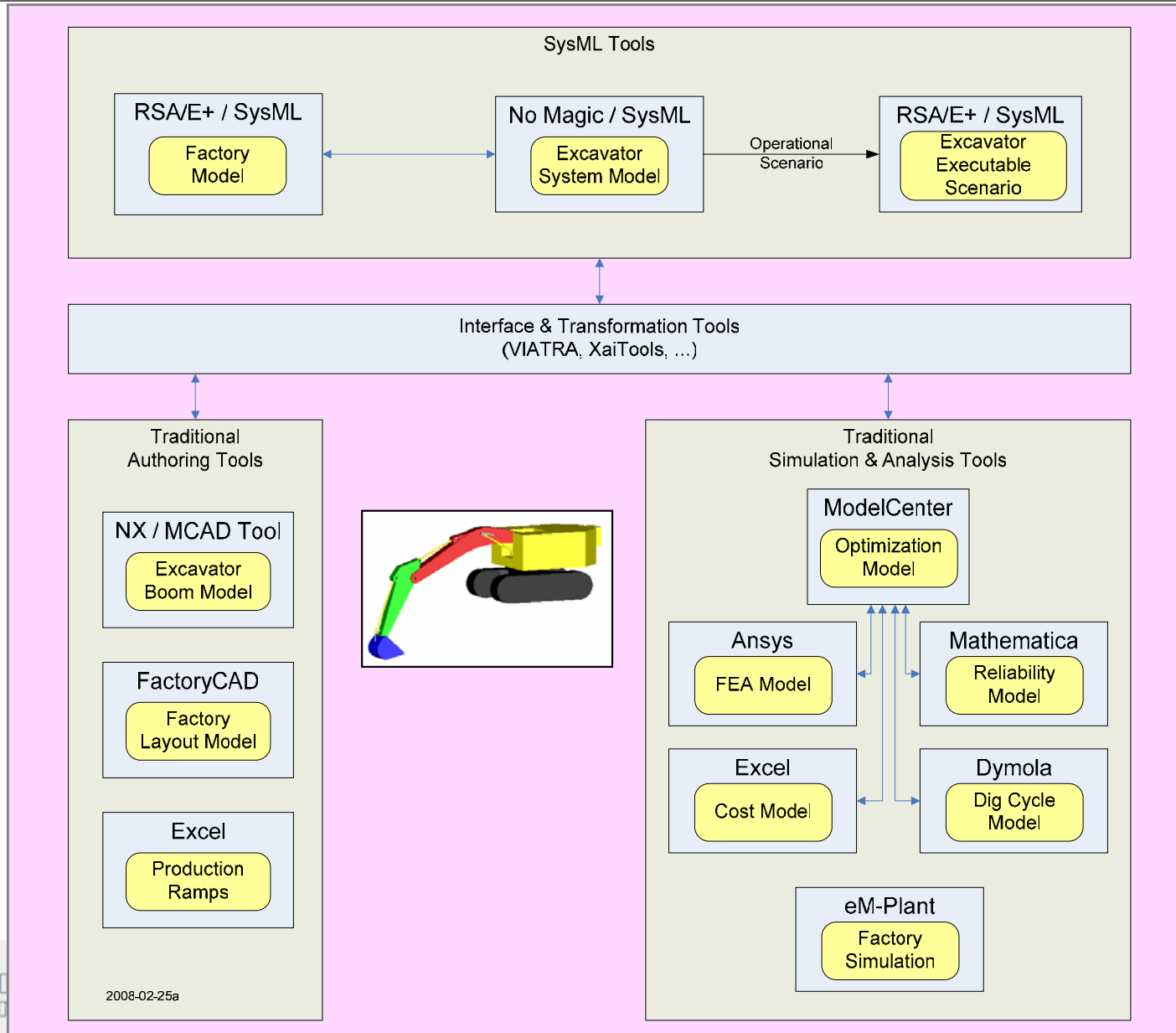
- Research Scientist in the Institute for Complex Engineered Systems at Carnegie Mellon University
- PhD in Electrical and Computer Engineering at CMU
- PhD Research: configuration design of robot manipulators
- Mechanical Engineering from the Katholieke Universiteit Leuven



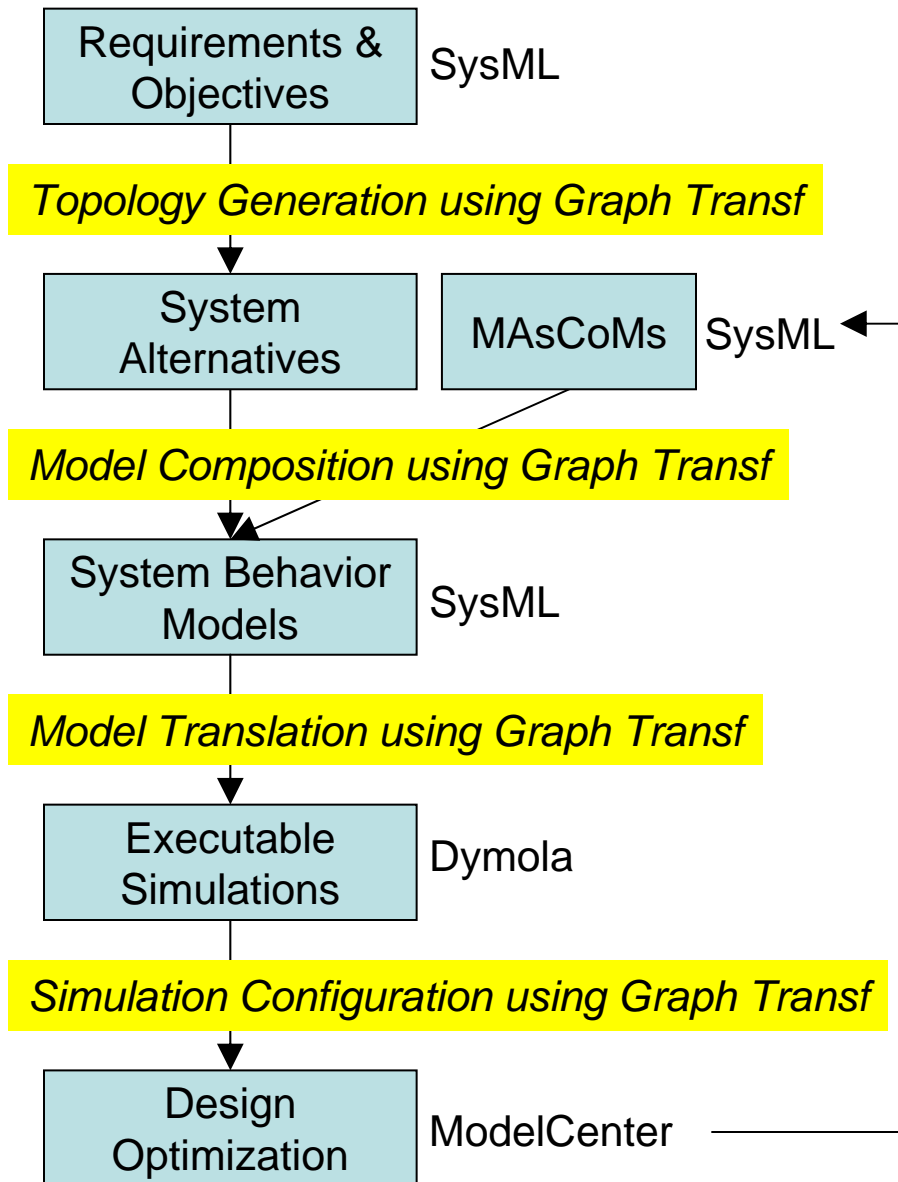
Research Overview



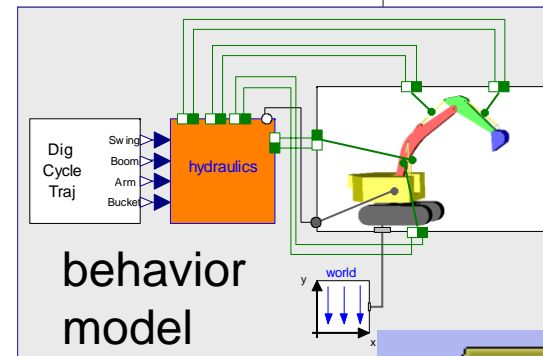
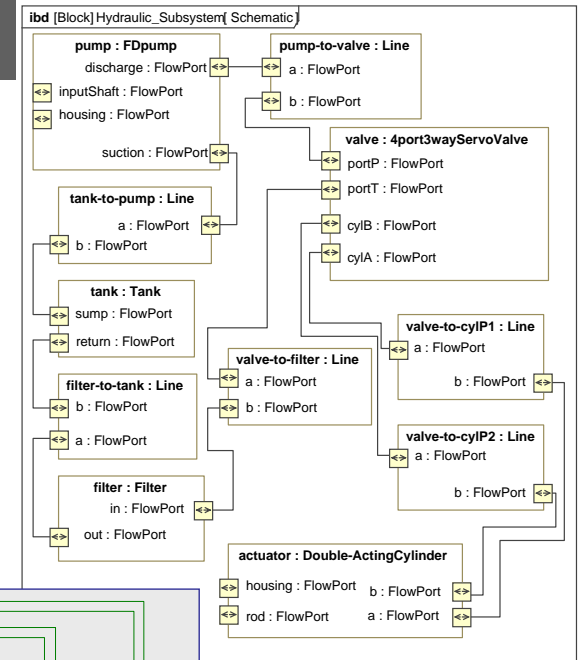
SysML as an Integration Framework



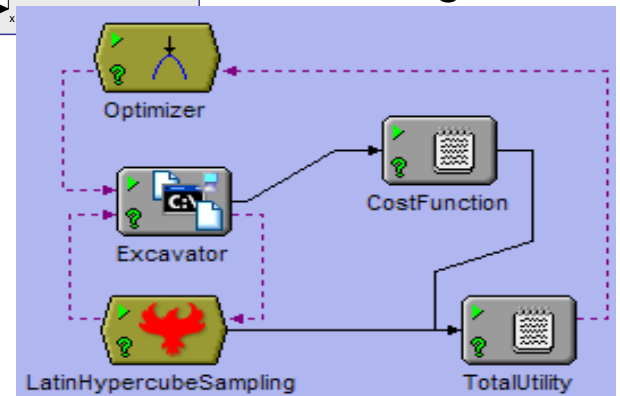
Capturing Fluid Power Knowledge in Models and Graph Transformations



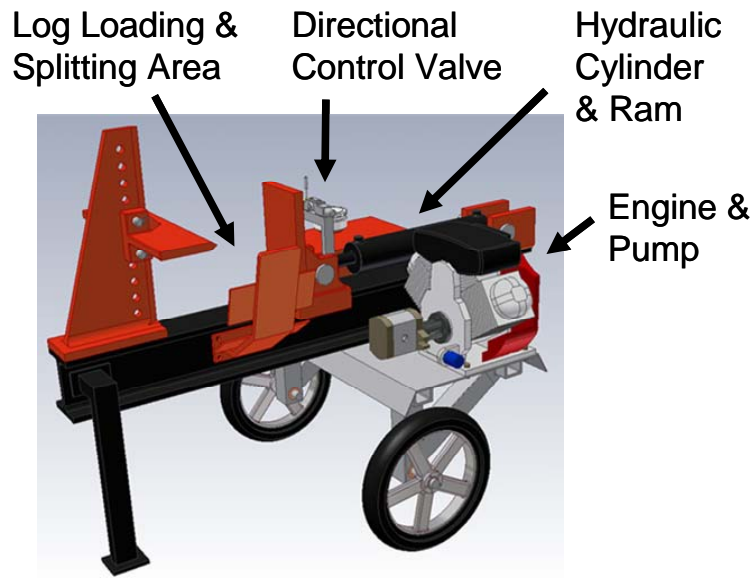
system alternative



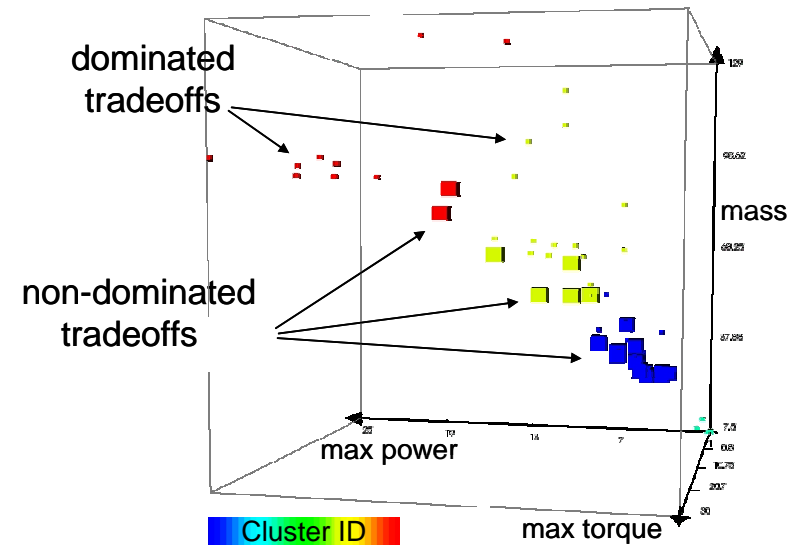
simulation configuration



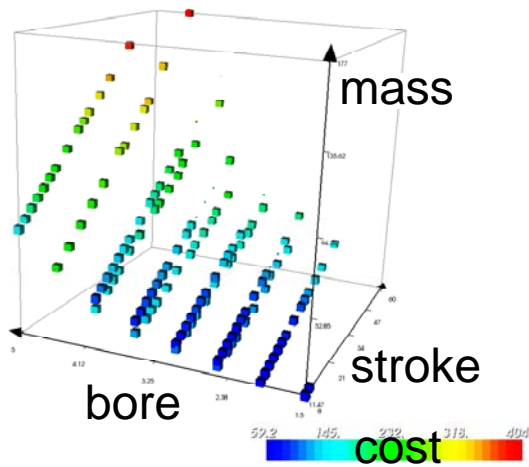
Predictive Trade-off Models: Data Mining



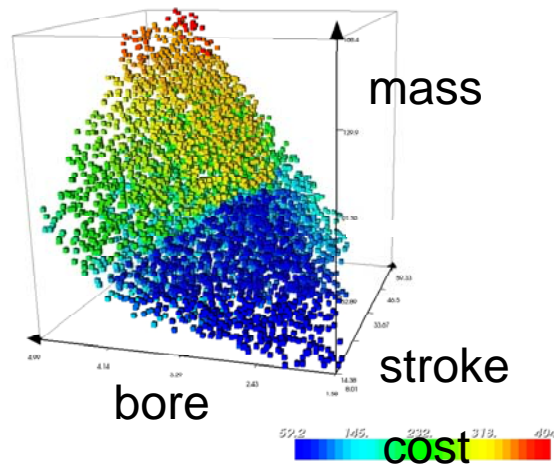
3D Projection of Small Engine Data (6D)
(Clustering and Domination)



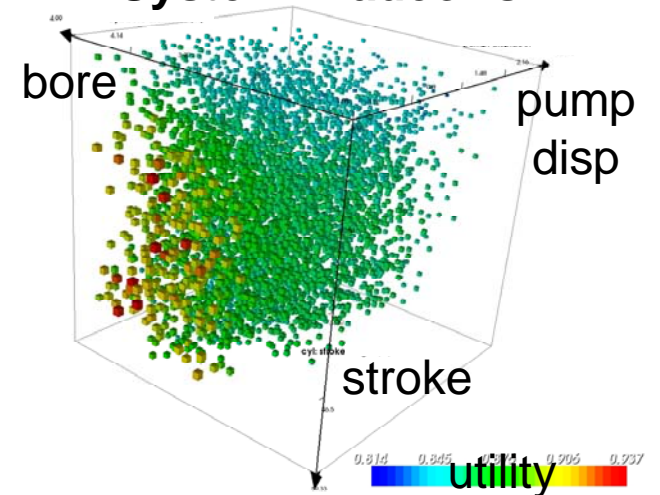
Raw Cylinder Data



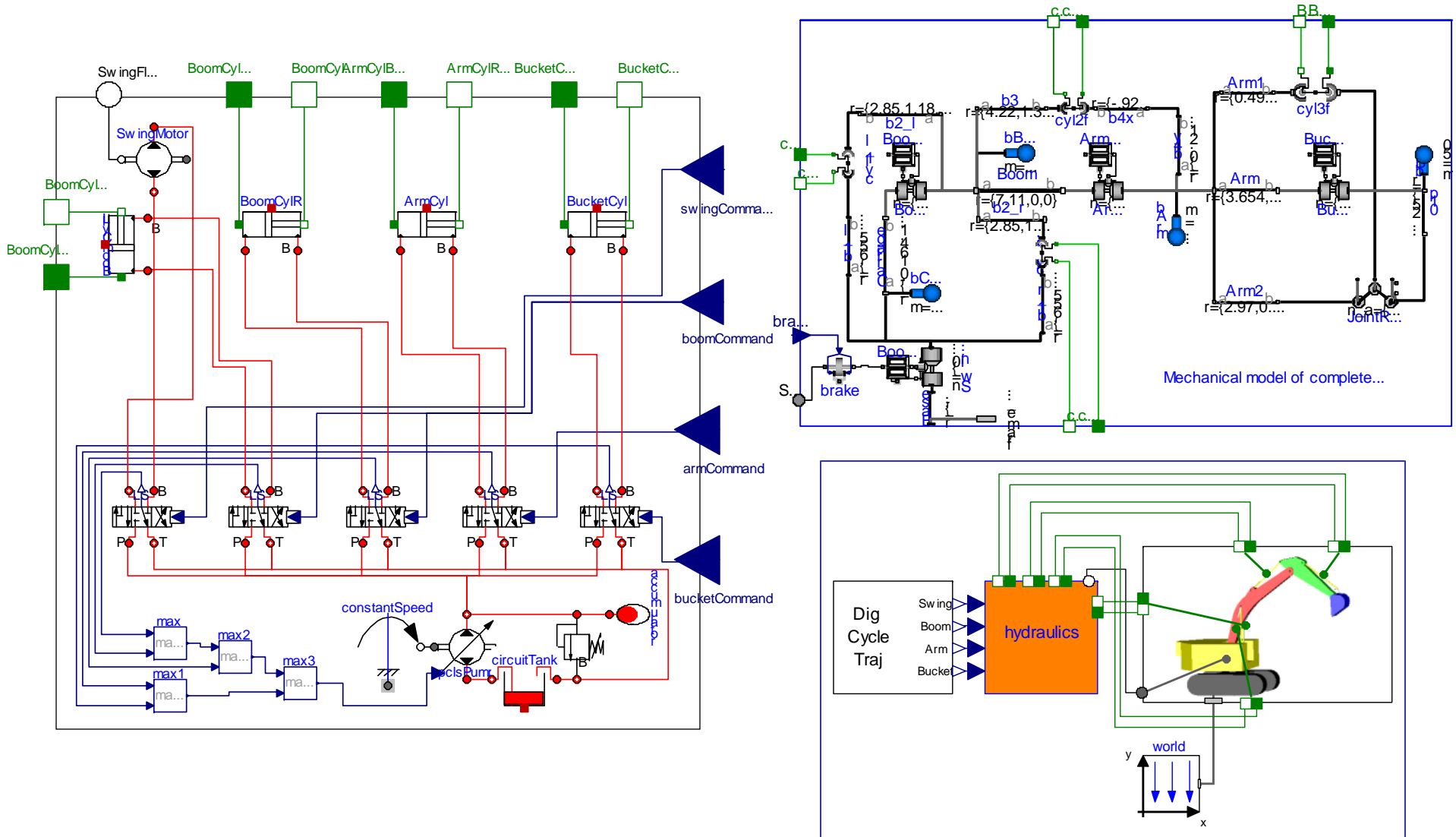
Predictive Cylinder Model



System Tradeoffs



Modelica



Topics of Interest

- Application of model and graph transformations to systems design
- Modeling and reuse of application domain knowledge
 - Modeling of context, uncertainty,...
- Modeling in concurrent engineering
 - Workflow
 - Consistency
 - Abstraction



Success Criteria

- Become more familiar with the current state of the art in model and graph transformations
- Learn about the opportunities and limitations for model and graph transformations in design
- Explore collaborations

