



Enterprise Architect

User Guide Series

Model Based Systems Engineering

How to model Systems Engineering? Sparx Systems Enterprise Architect provides a platform for system engineers, with the Systems Modeling Language (SysML) and model-based development, aiding research, design, testing and management of complex systems.

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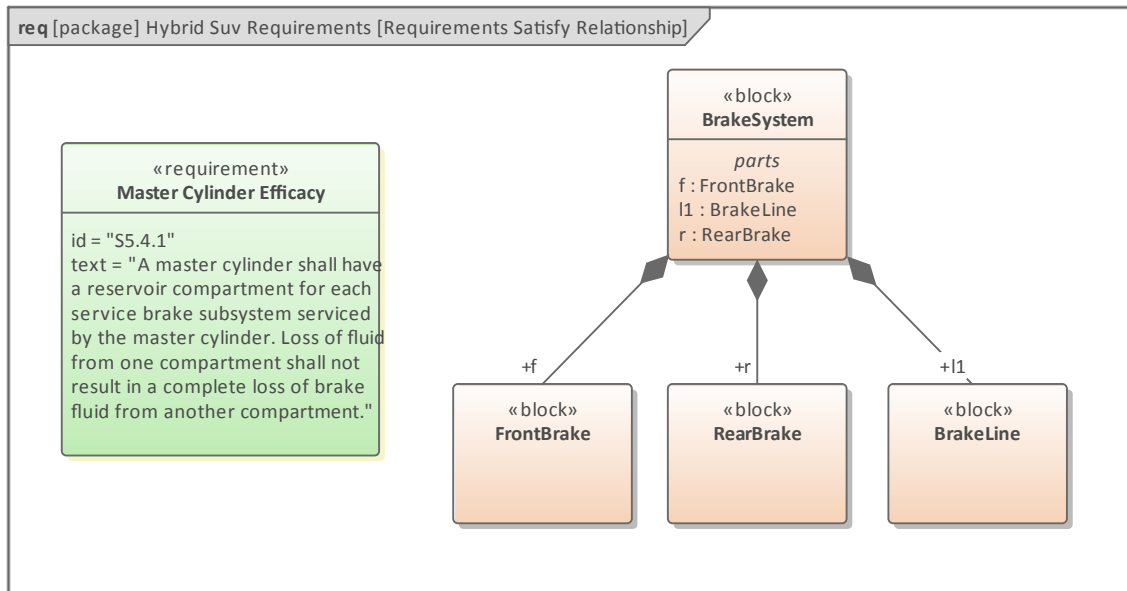
Model Based Systems Engineering

In the field of Systems Engineering, you consider how to research, design and manage complex systems over their life time. Systems Engineering focuses on the whole system and typically involves a number of sub-disciplines such as requirements, reliability, logistics, design, testing and maintenance; it considers not only the system itself but also processes, optimization and risk management, and requires sophisticated project management techniques.

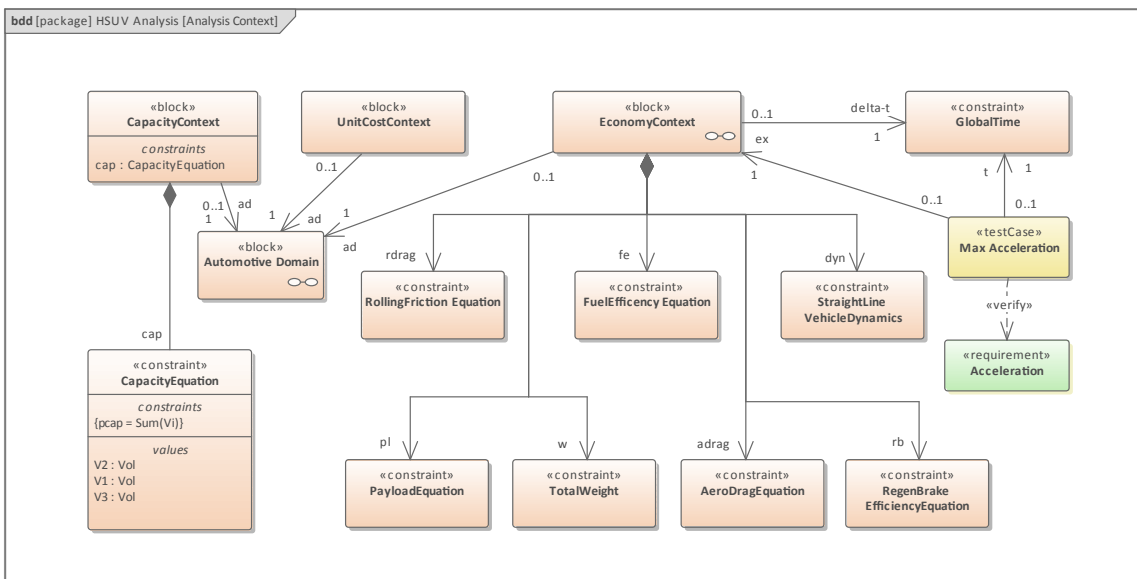
Enterprise Architect provides a Model Based Systems Engineering platform that integrates many high-end features for Systems Engineers and model-based development, with built-in support for:

- The Systems Modeling Language (SysML), versions 1.1, 1.2, 1.3, 1.4 and 1.5
- A number of engineering model templates
- Parametric model simulation
- Executable code generation
- Model to code transformations for Hardware Description Languages and ADA 2005 and 2012
- Support for project and process management

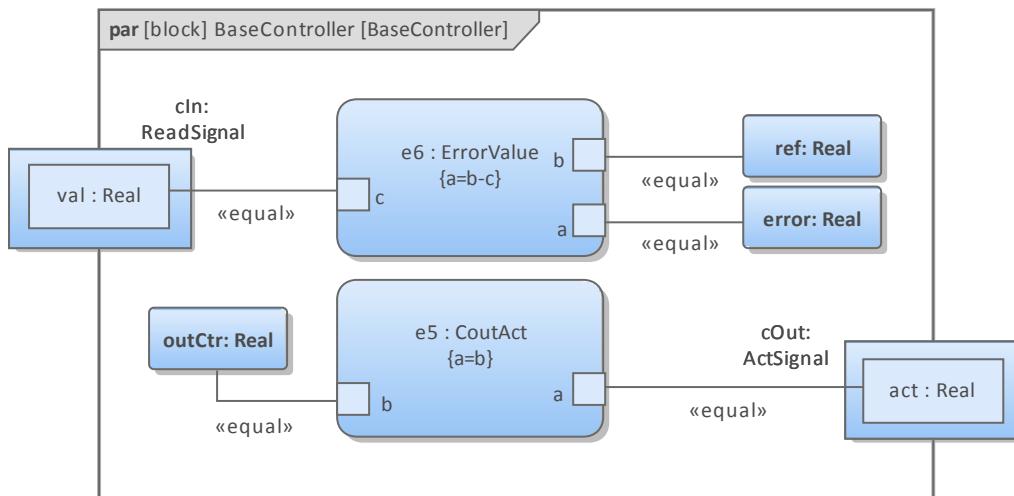
This image shows an example of a SysML Requirements diagram.



This is an image of a SysML 1.5 Block Definition diagram. It is part of the HSUV Model that can be found in the 'Systems Engineering' section of Enterprise Architect's Example Model.



This image shows an Internal Block diagram used in a Parametric Model Simulation. The diagram is part of the 'Two Tanks' example that can be found in the 'Systems Engineering > Modelica Examples' section of Enterprise Architect's Example Model.



This is a StateMachine diagram that can be used to run a model simulation. It is part of the Traffic Lights example that can be found in the 'Model Simulation > State Machine Models' section of Enterprise Architect's Example Model.

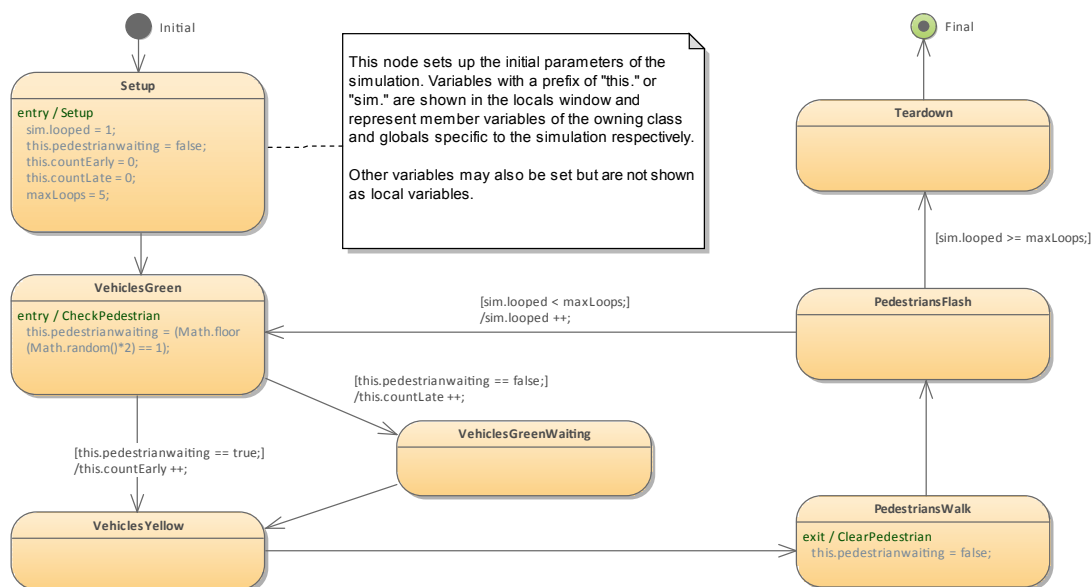
State Machine

Traffic Lights example

This state machine describes the state of a pedestrian crossing and demonstrates the capability of evaluating code during a simulation.

See also: [Help on running a simulation](#)

To run this simulation, from the 'Simulate' ribbon, select the 'Start' button. Alternatively, from the diagram's context menu, choose 'Execute Simulation | Interpreted'.



The Help topic *Systems Modeling Language (SysML)* provides an overview of how SysML is integrated with Enterprise Architect.

Notes

- In addition to developing system models, you can also design 'system-of-system' models, or system architectures, using the Unified Profile for DoDAF and MODAF (UPDM) or the Unified Architecture Framework (UAF); these are both accessible through the Systems Engineering Perspective with SysML

