

Dymola Multi-Engineering Modeling and Simulation

DYMOLA Highlights in Dymola 7.3

New editor for Modelica text

- Syntax highlighting and indentation while you type.
- Word completion and bracket matching.
- Improved support for displaying model structure and toggling of annotations.

Mathematical rendering of expressions

- Mathematical rendering of Modelica expressions makes model equations and command output much easier to comprehend.

Documentation

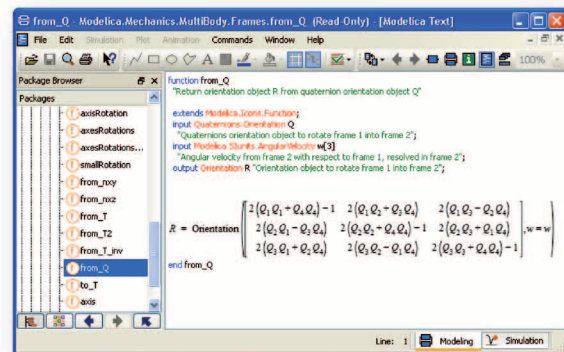
- Built-in browser for model documentation.
- Direct-manipulation HTML editor facilitates model documentation.

User interface

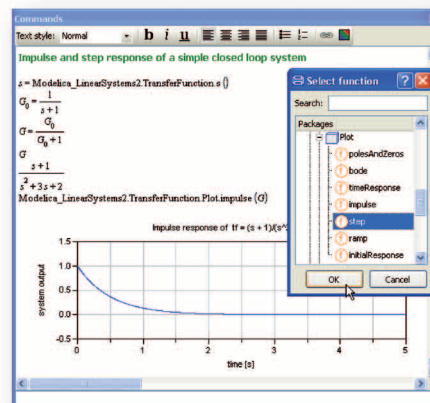
- The graphical editor and the plot window support convenient zooming and panning using the mouse.
- Editor to annotate the command window for report generation.

Support for Modelica 3.1 language

- Operator overloading, already used for LinearSystems.
- Preserving order for packages stored in separate files.
- Creating arrays in expandable connectors.
- Automatic sizing of connectors.
- Improved handling of arrays of records.
- Automatic differentiation extended for more cases.



Mathematical rendering of equations.



Completion of keywords and identifiers simplifies editing of Modelica text.

The new LinearSystems package takes advantage of operator overloading and mathematical rendering. The output in the command window can be annotated with the built-in editor to form an experimentation report. The Insert Function Call dialog simplifies searching and forming function calls.

DYMOLA

Library highlights in Dymola 7.3

Modelica Standard Library 3.1

- Modelica.Fluid library contains components to model 1-dim. thermo-fluid flow in networks of vessels, pipes, fluid machines, valves and fittings.
- Modelica.Magnetic.FluxTubes contains components to model magnetic devices based on the magnetic flux tubes concepts, especially electro-magnetic actuators.
- Many new components in existing libraries.

Vehicle Dynamics – Active Safety Library

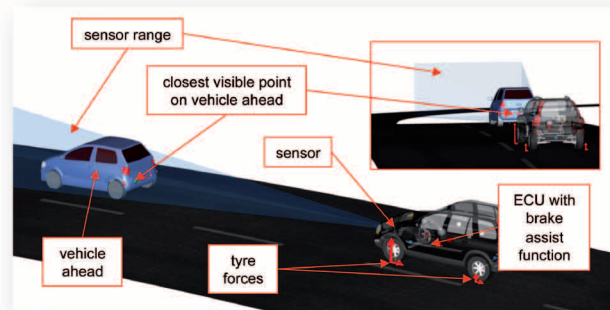
- Targeted to the development of active safety functions.
- A platform for complete systems integration of the driver-environment-vehicle-safety systems behavior.

Modelica_LinearSystems2 library

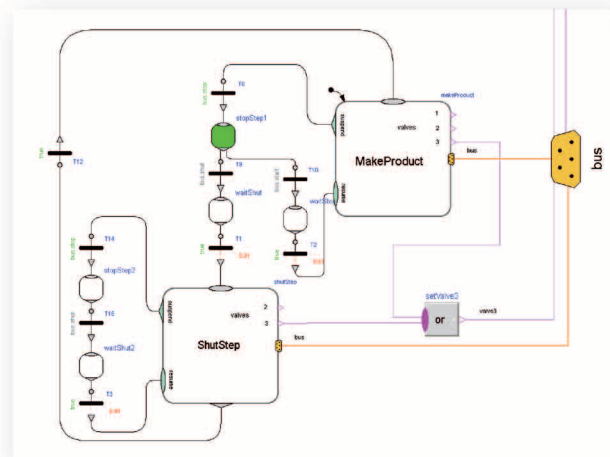
- Uses the operator overloading concept to maximize user friendliness.
- Analyze function to determine the characteristic of a system (eigenvalues, zeros, controllability, stability, etc.).
- Design sub-package contains functions for controller design, i.e. pole assignment, LQ controller, Kalman filter, and LQG controller.

Modelica_StateGraph2 library

- Used to model hierarchical state diagrams in combination with any Modelica model.
- Designed to simplify usage and improve correctness.
- Based on the experience with the experimental ModeGraph library.



Screen shot from a brake assistance function test.



Tank controller modeled with the new StateGraph library.

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