



3DEXPERIENCE

# Dymola 2014

Overview of new features

17 May 2013

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## Executive Summary

### Model editing and navigation

- Smart Connect – greatly simplifies graphical model composition.
- Search component by name in graphical editor.

### Simulation, plotting and post-processing

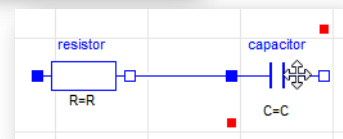
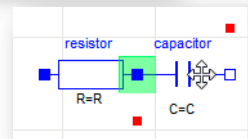
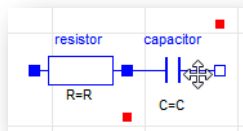
- CVMODE solver available in Dymola (same as for FMI for co-simulation).
- Fast Fourier Transform (FFT) available for post-processing.

### New model libraries

- Support for Synchronous Modelica and state machines, according to Modelica 3.3 specification.

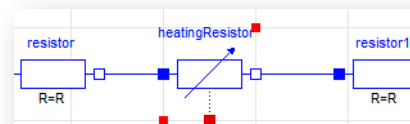
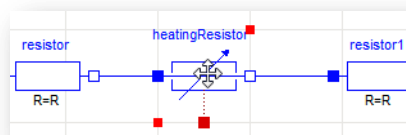
## Smart connect

- ▶ Drag component so connectors match
- ▶ Instant highlight of connection
  - ▷ Green = ok
  - ▷ Yellow = not possible to use smart connect
  - ▷ Red = connectors not compatible
- ▶ Drag component to desired location
- ▶ Can rotate component while dragging



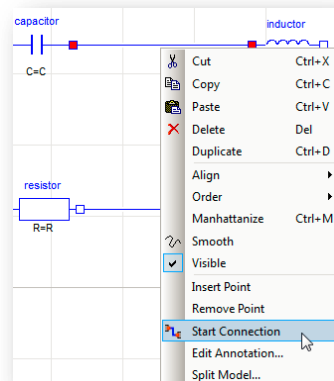
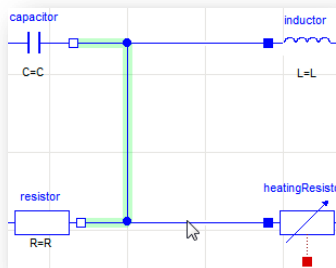
## Insert component in connection

- ▶ Drag component
- ▶ Drop on existing connection
- ▶ Successful connection highlighted



## Connection from/to existing connection

- ▶ Right-click and start new connection from an existing one
- ▶ End connection on matching existing connection



## Plotting

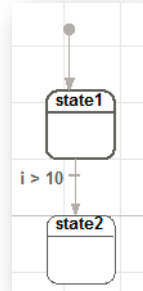
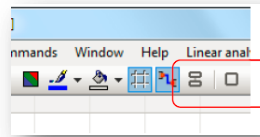
- ▶ Fast Fourier Transform (FFT) available as signal operator
- ▶ Mathematical definition of signal operator in release notes
- ▶ Configurable unit on horizontal time axis
- ▶ Duplicate plot diagram (with contents)
- ▶ Create data table from plot window

The screenshot shows a data table window with the following data:

	0	0.00240000011399	0.00480000022799	0.00719999987632	0.00960000045598	0.0120000001
J1.w	10	9.97690391541	9.95561027527	9.93609809875	9.91834259033	9.902309
J2.w	0	0.0239999759942	0.0479997694492	0.0719991326332	0.0959978625178	0.1199957
J3.w	0	3.62557206479e-15	5.25274268526e-15	6.49480469406e-15	5.39845945724e-15	8.701372955
J4.w	0	3.62541239908e-15	5.25243182417e-15	6.49432527341e-15	5.39775006715e-15	8.7004437603

## State machines

- ▶ Support for state machines according to Modelica 3.3
  - ▷ Now in General Availability
  - ▷ Tools to add states and transitions
- ▶ Modelica Synchronous library
  - ▷ Now in General Availability
  - ▷ The synchronous features of Modelica 3.3 are supported



## Other improvements

- ▶ Find component by name in graphical view (diagram layer)
- ▶ Wildcards in Modelica Text “find” dialog
- ▶ Open file by dragging into graphical editor
- ▶ **File > Load** command – open file without changing current directory
- ▶ Improved “split model”
- ▶ Rotate component while dragging (arrow keys)
- ▶ CVODE from SUNDIALS supported in normal simulation, not only FMI
- ▶ Warning when license is about to expire

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