ALTAIR
ONLY FORWARD
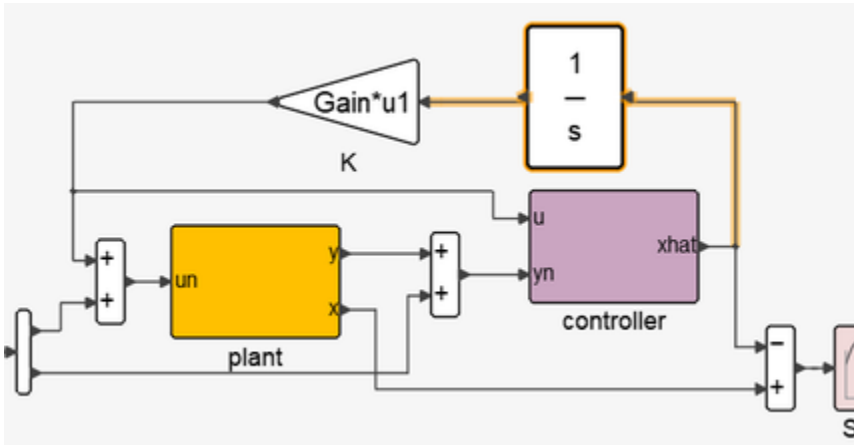
Altair® Twin Activate® 2024.1

New Features and Enhancements 2024.1
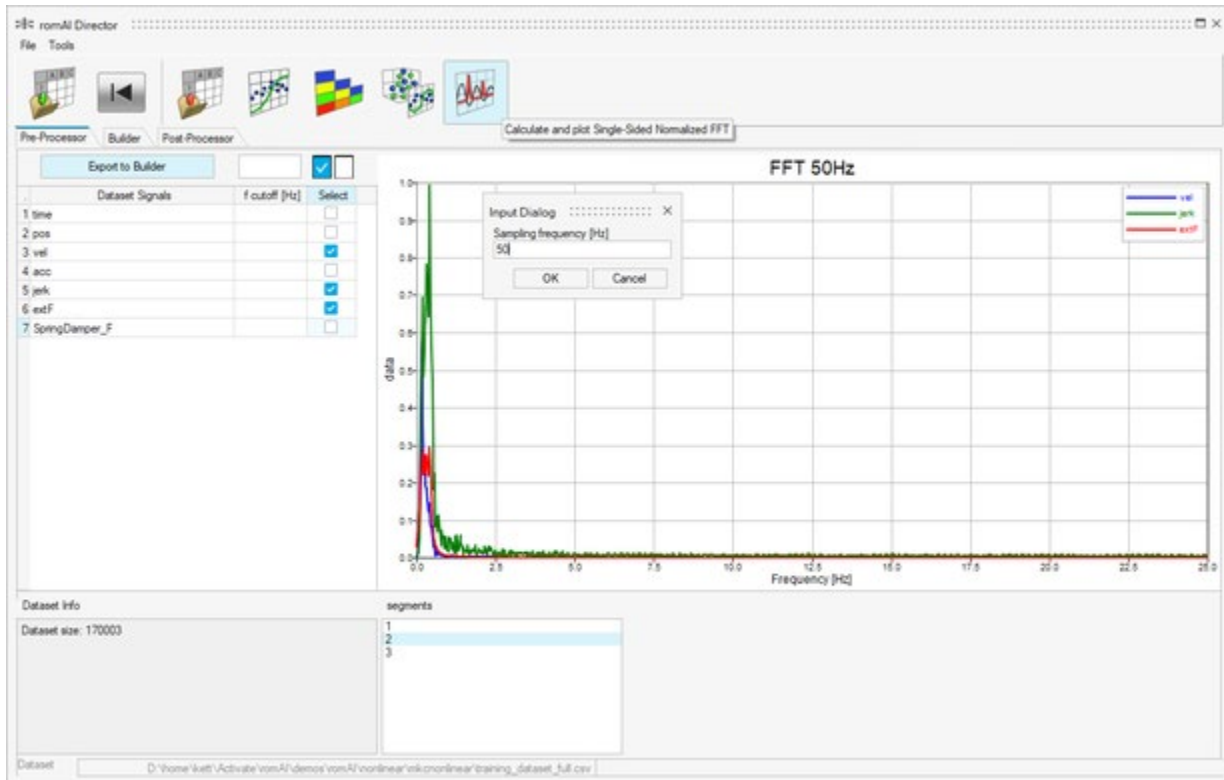
Release Highlights

User Interface

Insert block / component into connection line

romAI Director [*]

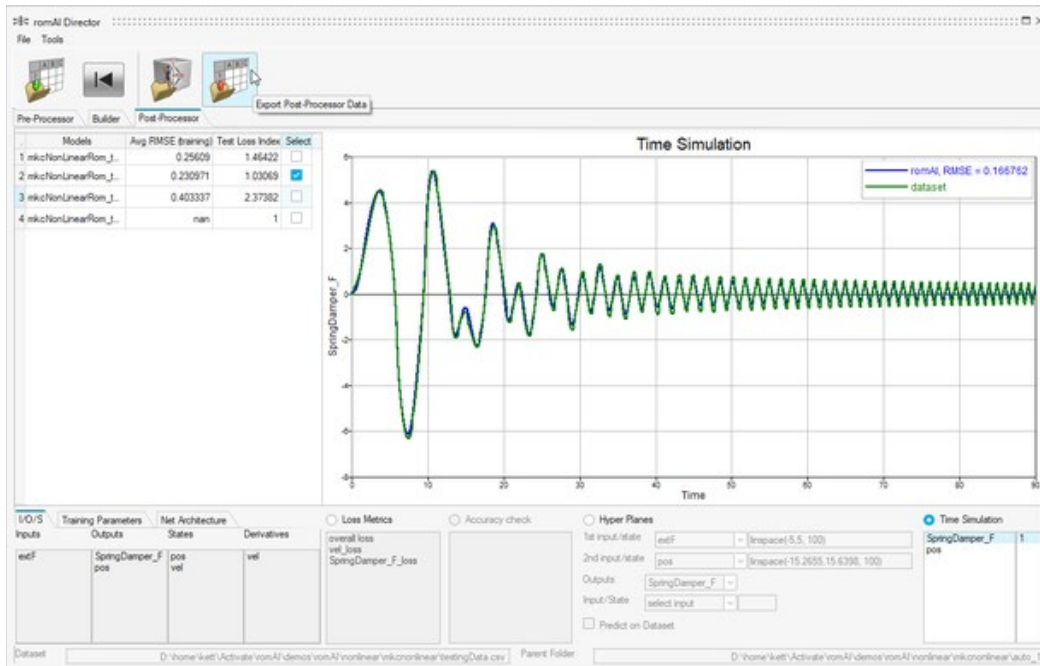- Frequency domain view of signal added to Pre-Processor

- New RMSE metric for both static and dynamic scenario.

- New API to execute romAI in batch mode using the instance evaluation/time simulation function of romAI Director.
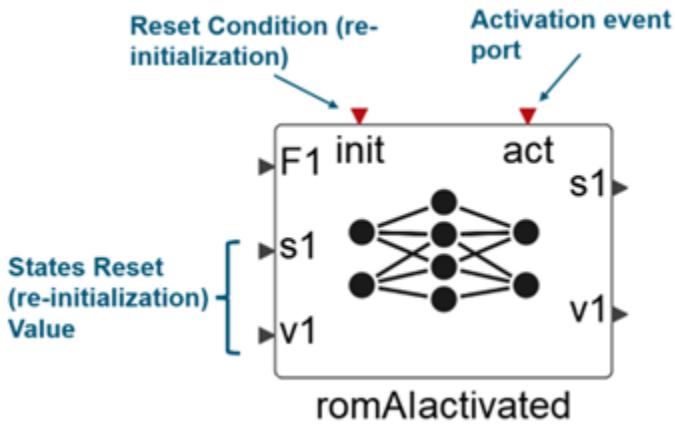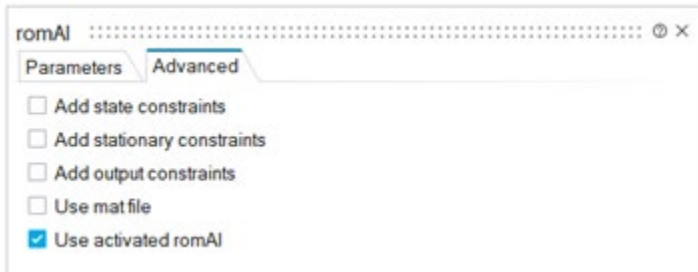
```
[x, inputs, outputs] = romAI_execute (dataset_file, romAI_folder)
with
x = time or instances (vector)
inputs = inputs to the romAI model (matrix)
outputs = outputs of the romAI model (matrix)
```
For more information, see romAI_help.pdf (romAI Director - File - Help).

- Time label of dataset for training regardless of upper and lower case letters ('time', 'Time', 'TIME', etc.)

- Export Time simulation / instance evaluation data in Post-Processor as .csv or .mat file.
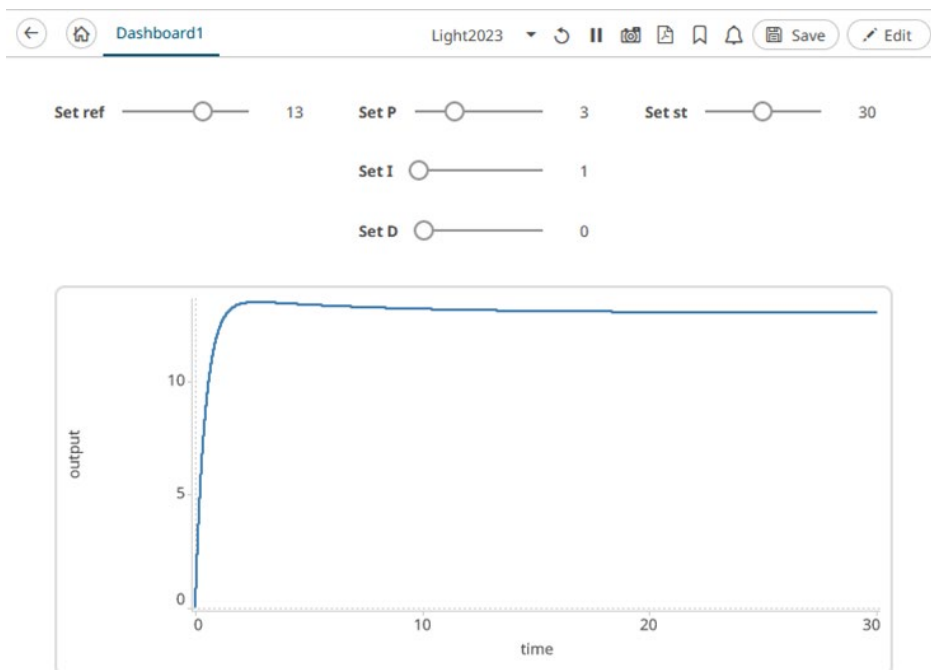
Extended romAI block *

romAI block with external activation and reset/set of internal states. For more information, see romAI_help.pdf (romAI Director - File - Help).
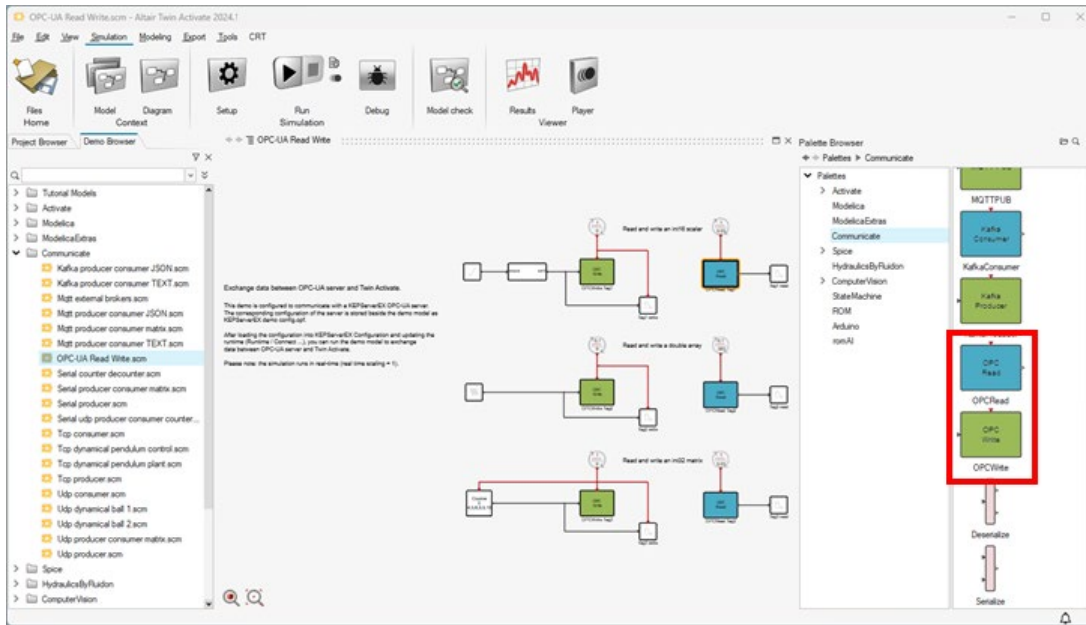

Tutorials

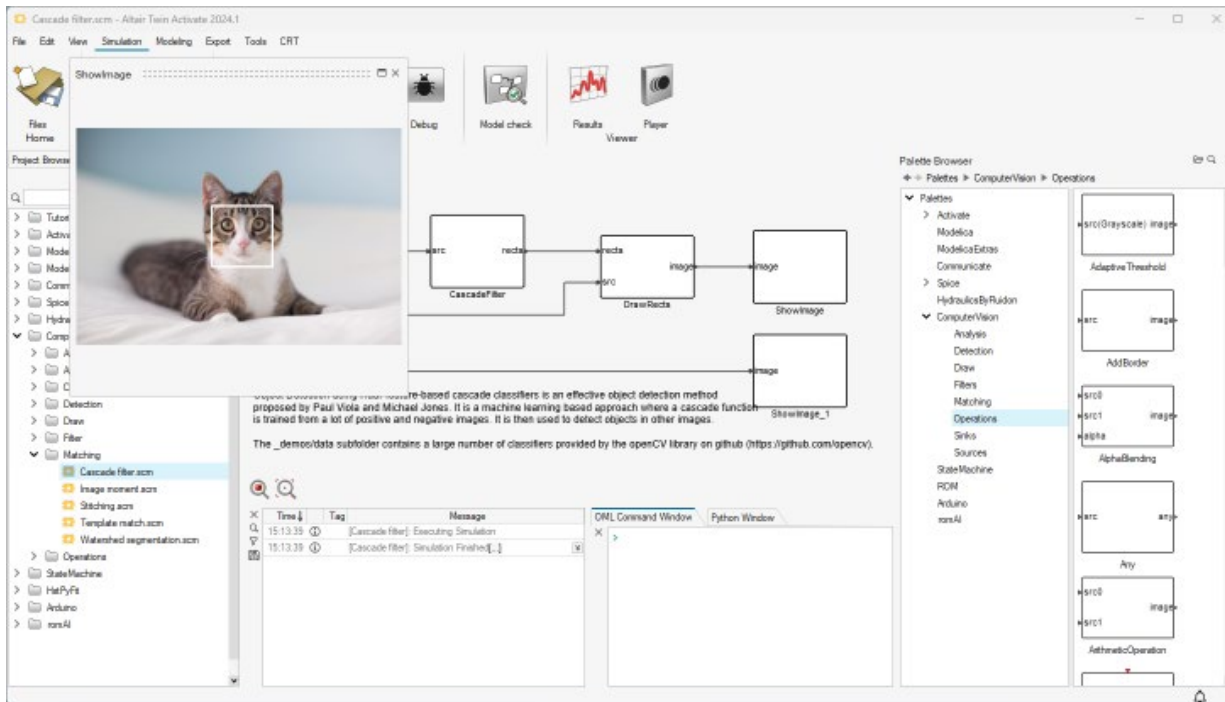New tutorial: Twin Activate FMU in Panopticon dashboard.

Libraries

Communication - OPC-UA *

Blocks for read from and write to a PLC via OPC-UA

Computer Vision

New library Computer Vision for image and video processing.

Other Enhancements for Libraries

Modelica

RealExpression, IntegerExpression, BoolExpression exposed in Modelica/Blocks/Sources. Demo can be found at Demo Browser/Modelica/Blocks/RealExpression.scm.

HydraulicsByFluidon *

New component AnnularGap. Model of circular gap with eccentricity and conical inner part.
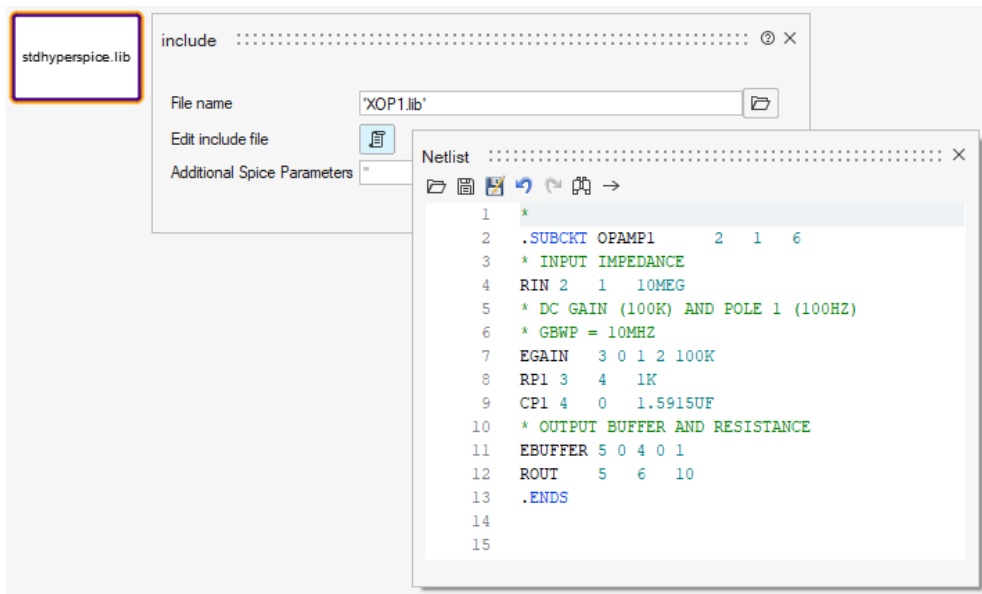
VI-CRT *

Update of VI-CarReatTime block for co-simulation with latest release of VI-CarRealTime from VI-grade.

Activate

FromCSV: Give a warning if the time column in the CSV file contains Nan or is empty.

Spice *

Load and edit a netlist file in the include block.

Enhancements
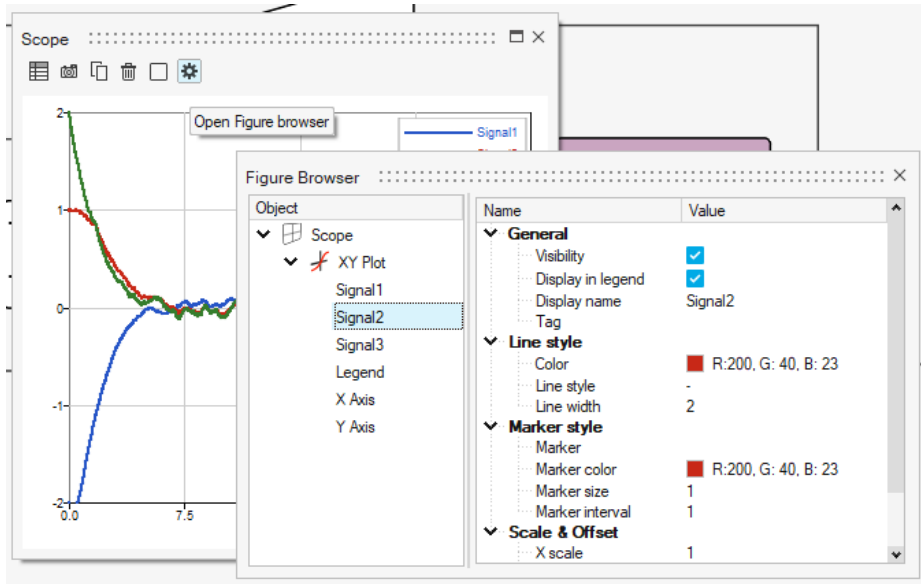
Enhancements for Code Generation

The inlined code generation supports Modelica models by using co-simulation FMUs. The Modelica solver options are included as a MaplesimCompilerOptions block, if such a block is not already present. A variable step solver (SDIRK), for which step size need not be set, is used instead of the Euler solver with the step size taken from inlined solver.

Enhancements for UI

Scopes

- Simplified and clear setting of scope properties.

- Take a screenshot or save an image of a figure by clicking the button in the scope.
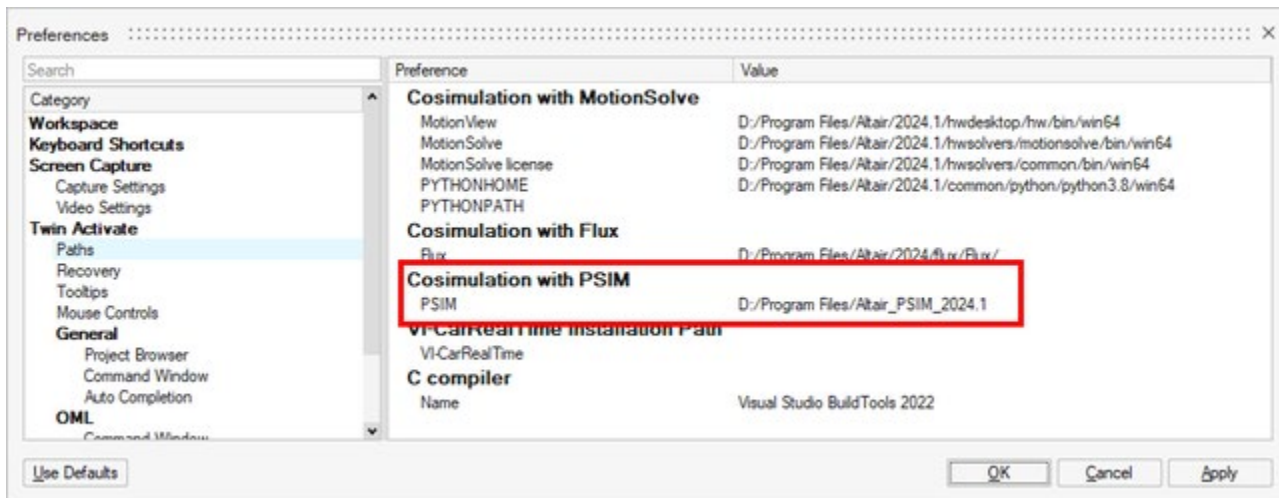
- Arrange subplots.

Enhancements for Co-Simulation *

Flux

Improved error message if path to Flux is not set in preferences.

PSIM

Set path to PSIM installation in path settings. This helps to select a specific release of PSIM.

Enhancements for Demo Models

New or extended demo models for Computer Vision, OPC-UA, and Modelica.

Resolved Issues

Code Generation

- Strings are not exposed with standard code generation.

- Host Standalone target fails with tcc compiler.

- The execution of an FMU containing Modelica components exported with inlined code generation and FMI3 as FMU version leads to a crash under Linux.

Modelica

Initialization of arrays inside records through functions.

romAI *

- Correlation Coefficient filter slider not working continuously (only 0 and 1)

- FMU export of romAI with large matrix size fails with Visual Studio compilers.

UI

- Copy message from message center contains HTML labels.

- Collapse all in demo browser.

- Icon display at mouse during drag and drop block from palette.

- If replacing a block with another block, connections could be interrupted in some cases.

Miscellaneous

- Update of all tutorials and tutorial files.

- Help of Block builder points to wrong help page.

*** Applies to Commercial Edition only**