Altair® Twin Activate™ 2025.1

NEW FEATURES

Libraries

Modelica Library: Model Import

The import of a Modelica library was extended by the import of contained demo models as Twin Activate models in the 2025 release. The new Modelica model import lets you import single Modelica models as Twin Activate models. Model structure and parameters are imported. This facilitates the reuse of legacy Modelica models. The function can be found under File > Import > **Modelica Model**.

Code Generation *

FMU

FMI 3.0 standard is now available not only for inlined, but also for standard code generation. This means that the entire FMU generation is available for FMI 2.0 and 3.0.

VHDL

An extension will soon be available that lets you create VHDL code from a block model and co-simulate VHDL code in a plant model. The code can be simulated on, or synthesized for, FPGAs, ASICs, and other hardware systems.

VHDL is a hardware description language used to model and simulate the behavior of digital and electronic systems.

Check Twin Activate/Downloads on Altair One for updates.

romAI *

Export as FMU

romAI models are used not only in Twin Activate models, but often also with other Altair and external tools. For this purpose, the romAI model is usually made available in an FMU.

The optimized workflow to generate an FMU of a romAI model out of the romAI Director simplifies the further use of romAI in other applications.

You can create the FMU of a romAI with only two mouse clicks.

The previous need to create a simulation model with the romAI block, import the romAI model, add input and output interfaces, etc., has been replaced by direct FMU export.
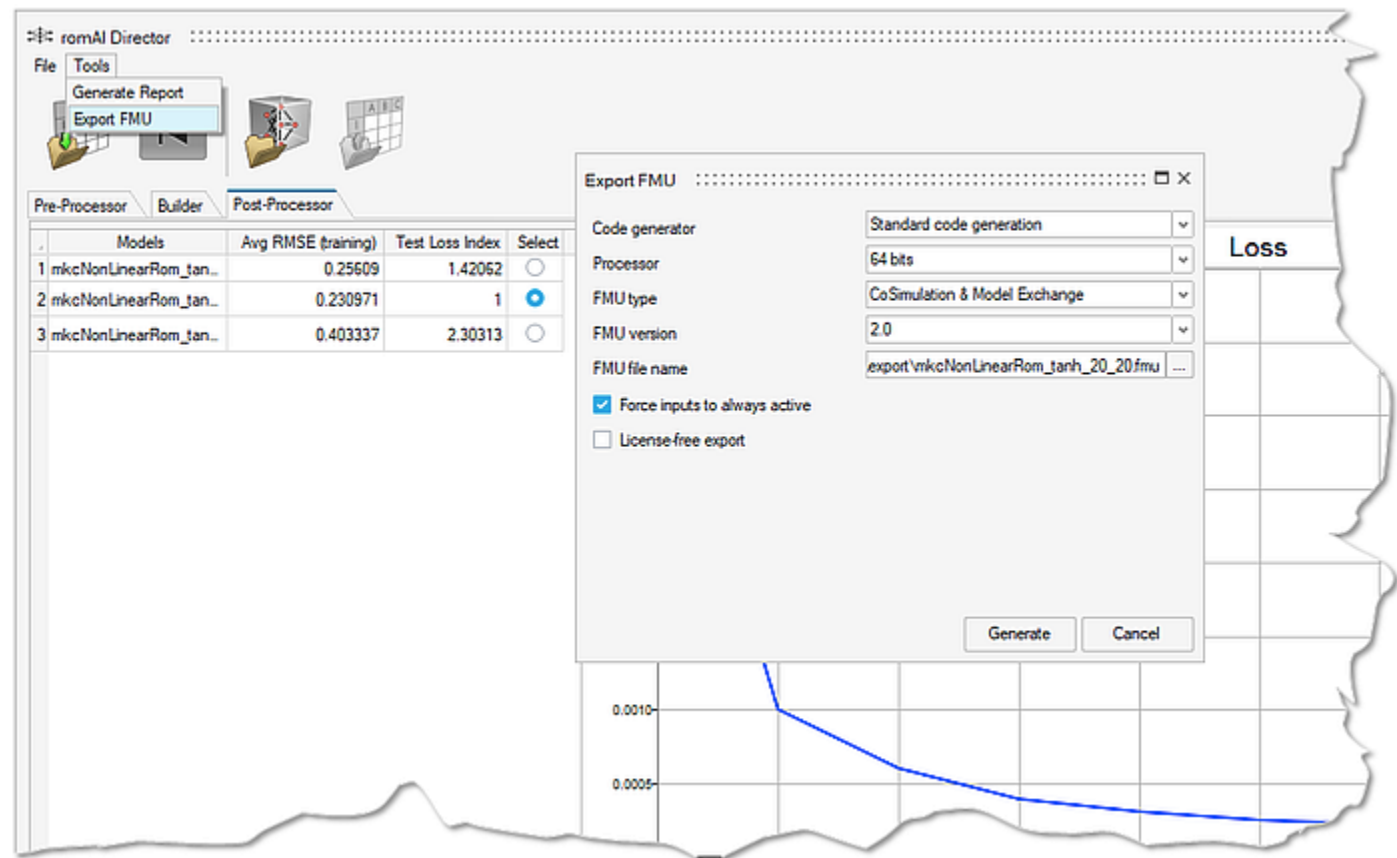

Integration and Collaboration

HyperStudy Solver

Twin Activate is available as a standard solver in HyperStudy. Design variables of a Twin Activate model are read into HyperStudy. Output sources are also read into HyperStudy during design exploration and optimization studies.

Together, Twin Activate and HyperStudy provide a powerful combination to develop high-performance, reliable digital twin models, and conduct thorough, data-driven design optimizations.
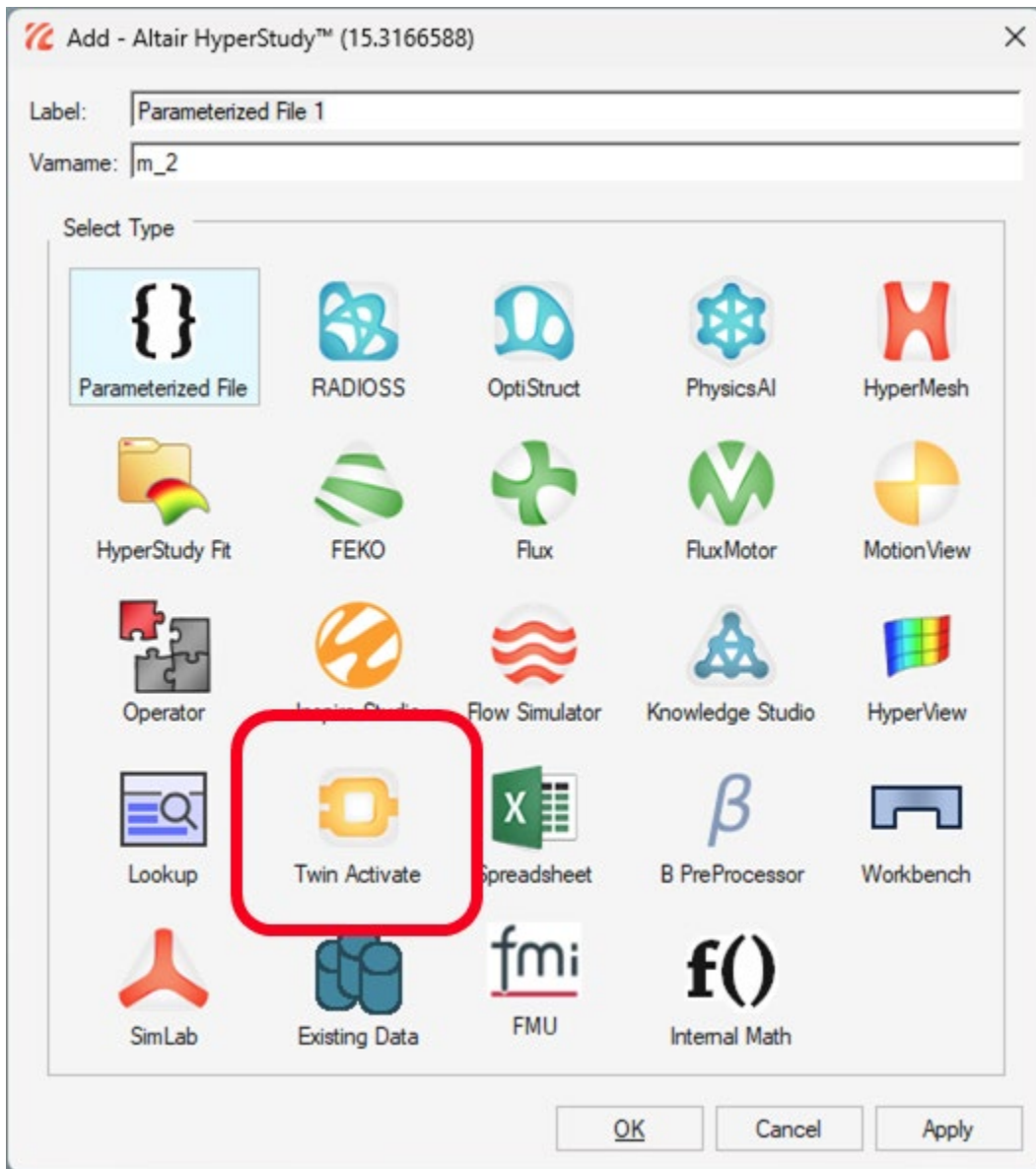
The new tutorial Optimizing a Controller with HyperStudy gives step-by-step instructions on how to prepare the model and set up a study in HyperStudy.

ENHANCEMENTS

Code Generation *

FMU

FMU export for FMI 3.0 supports the optional feature set/get state. This lets you save a state at any point of time and reuse it for initialization of a new run of the FMU. This feature is useful for

dynamic FMUs used in IoT Studio.

Custom Wrapper

The libraries based on a custom wrapper library have been extended. Numerous demo models show the application of components.
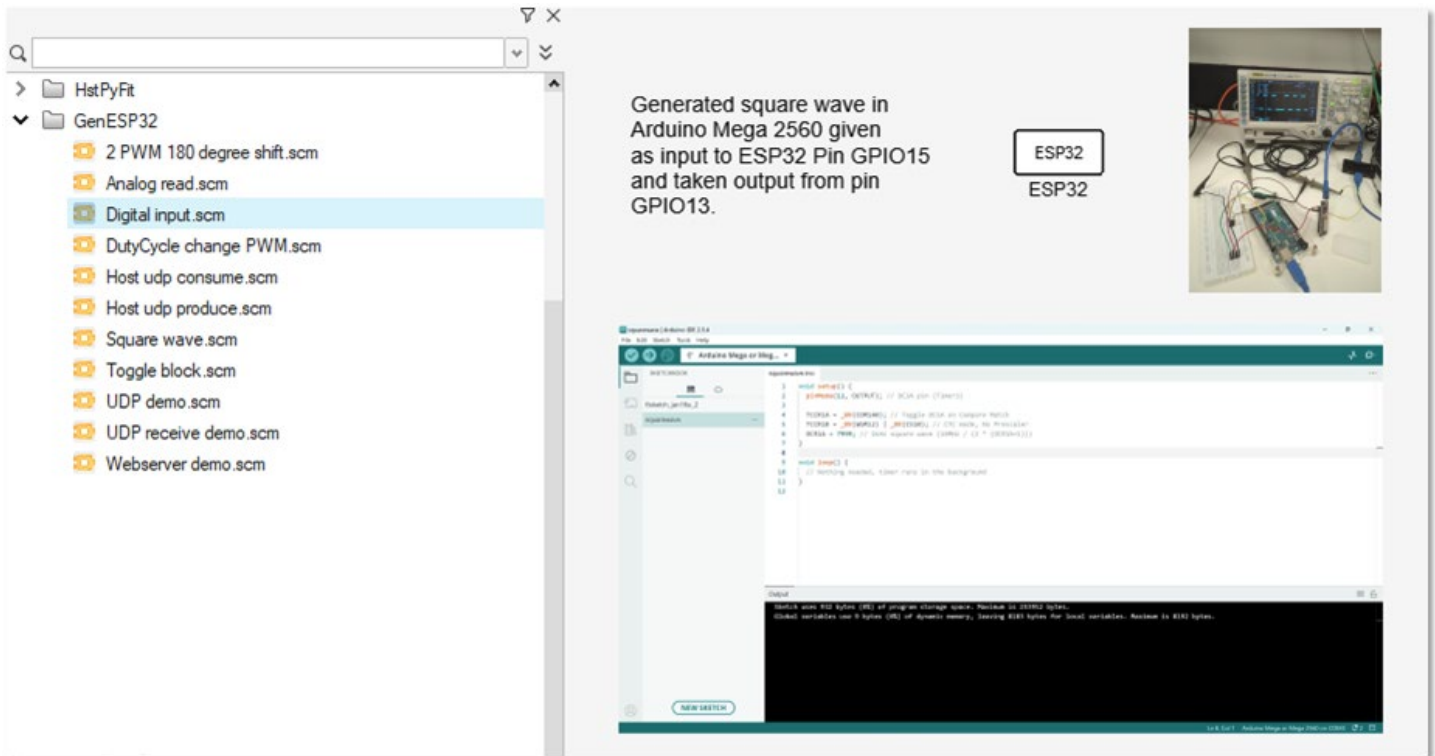
Check Twin Activate/Downloads on [Altair One](#) for updates.

romAI *

Transfer Learning in Batch Mode

The batch command romAIdirector_batch now has an option for transfer learning. The inputs to the function in this case are:

- Training dataset file

- The destination folder

- The name of the romAI model

- The training parameters that are available in transfer learning

- The folder of a trained model

The rom structure and math model are loaded from the trained model. You can set only the training parameters that you want to change; all other training parameters will be loaded from the trained model.

Libraries

## Communication Library: TLS Support for MQTT *

MQTT communication has been enhanced with TLS certificate support. It enables data exchange in a secured environment. TLS version 1.1, 1.2, and 1.3 are supported.

HydraulicsByFluidon Library: Soft Bump Stop in Cylinders

The cylinder models are extended by a soft bump stop as an alternative to the hard stop. The soft stop buffer is particularly useful for co-simulation with MotionSolve models. This avoids running events at initialization time and the need for bump stops in the mechanical model.

Activate Library: New Component AnalogFilter

The AnalogFilter now supports filter types Butterworth, Chebyshev, Elliptic, and Bessel, which work as lowpass, highpass, bandpass, and bandstop.
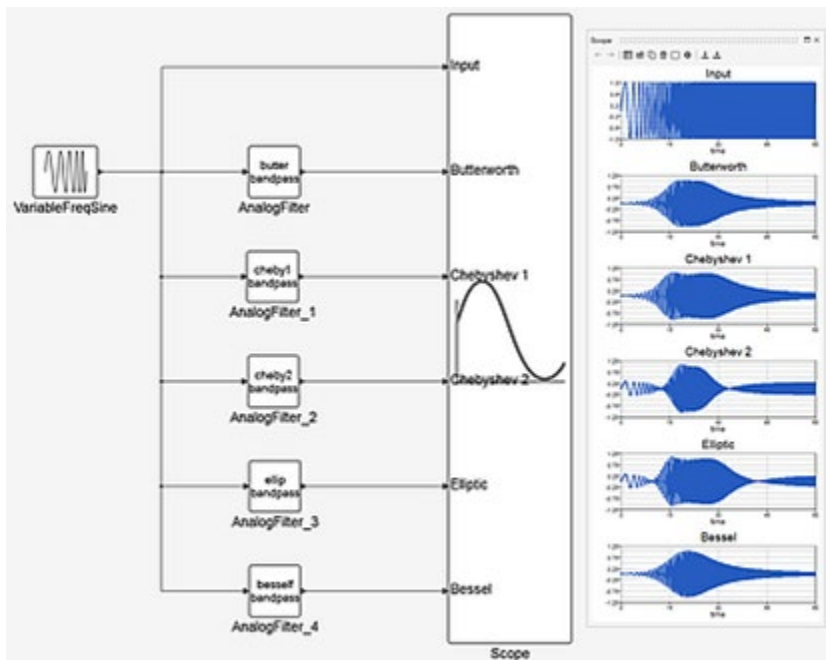
Component Help

Extended help is available for LookupTableND and LookupTableND_port. The required format for data is documented and an OML example is added. The Demo Browser contains new demos for

these blocks.

Scopes

Subplot Title and Signal Name

The title of a subplot is used as the name of a signal (and vice versa) when you change the **Each input as a subplot** option.

RESOLVED ISSUES

- UI

    - Switching two blocks sometimes created wrong connections.

    - Undo failed in some cases when a port was connected to a split.

    - OML editor jumped to another position if clicked with CTRL + left mouse button.

- romAI *****

    - Datasets with ['unit'] in signal names caused the training to fail.

- Linux

    - Contact Support help link did not open if the browser was not already open on Linux.

- Miscellaneous

    - In some cases, Twin Activate crashed after a pause and resimulation of models using the system invariant block.

KNOWN ISSUES

The following known issues will be addressed in a future release:

- As of October 14, 2025, Microsoft Windows 10 will reach its end of support. Following Microsoft's messaging, all Altair 2026 applications will no longer support Windows 10. Altair is providing this information to help our customers prepare and accommodate for this change. Altair 2026 will support the Windows 11 operating system, along with our other Linux-based operating systems. Please contact your local Altair support teams if you have any questions or concerns.

* Applies to Commercial Edition only