

2021x Refresh1 Version News

Magic Model Analyst

Released on: June 4, 2021

This version of Magic Model Analyst introduces Dymola integration allowing you to run Dymola commands, a possibility to use HTML widgets in UI mockups, a way to terminate streaming Activities by output parameter multiplicity, and new parameters for simulation via command-line. Additionally, performance in large Teamwork Cloud projects has been significantly improved.

[Dymola Integration](#)

[HTML Widgets in UI Mockups](#)

[Performance Improvements in Large Teamwork Cloud Projects](#)

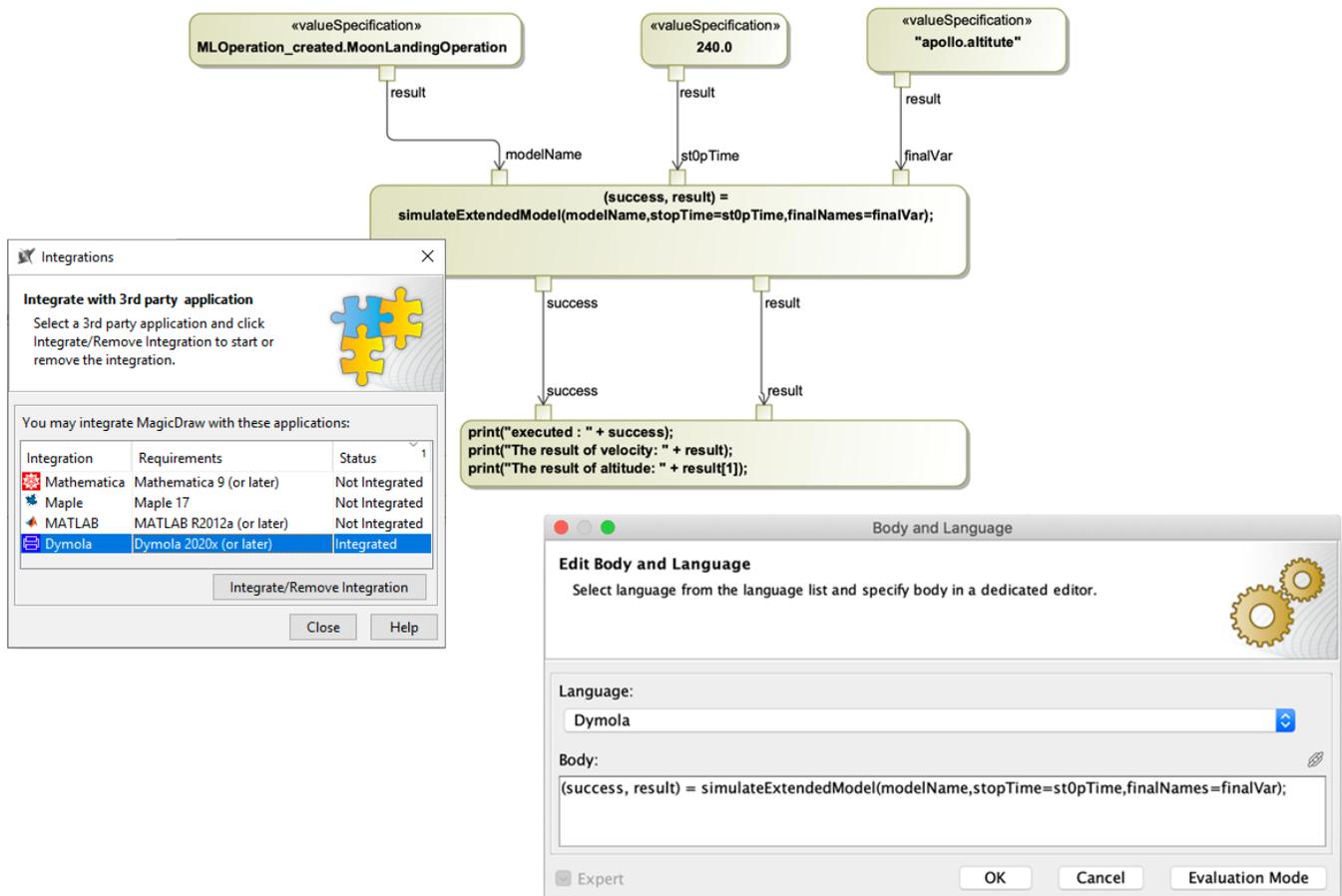
[Improved Text-Based Requirement Verification Project Option for Terminating Streaming Activities](#)

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Dymola Integration

Magic Model Analyst 2021x Refresh1 introduces a new tool-to-tool integration with a locally installed Dymola. When integrated, a remote Dymola command interface is plugged as a new “Dymola” language and can be used anywhere expressions are allowed (OpaqueExpressions, OpaqueActions, etc.). You can also exchange variable values, trigger external Modelica model simulation, manipulate data files, export models to FMU, and run any other Dymola command.

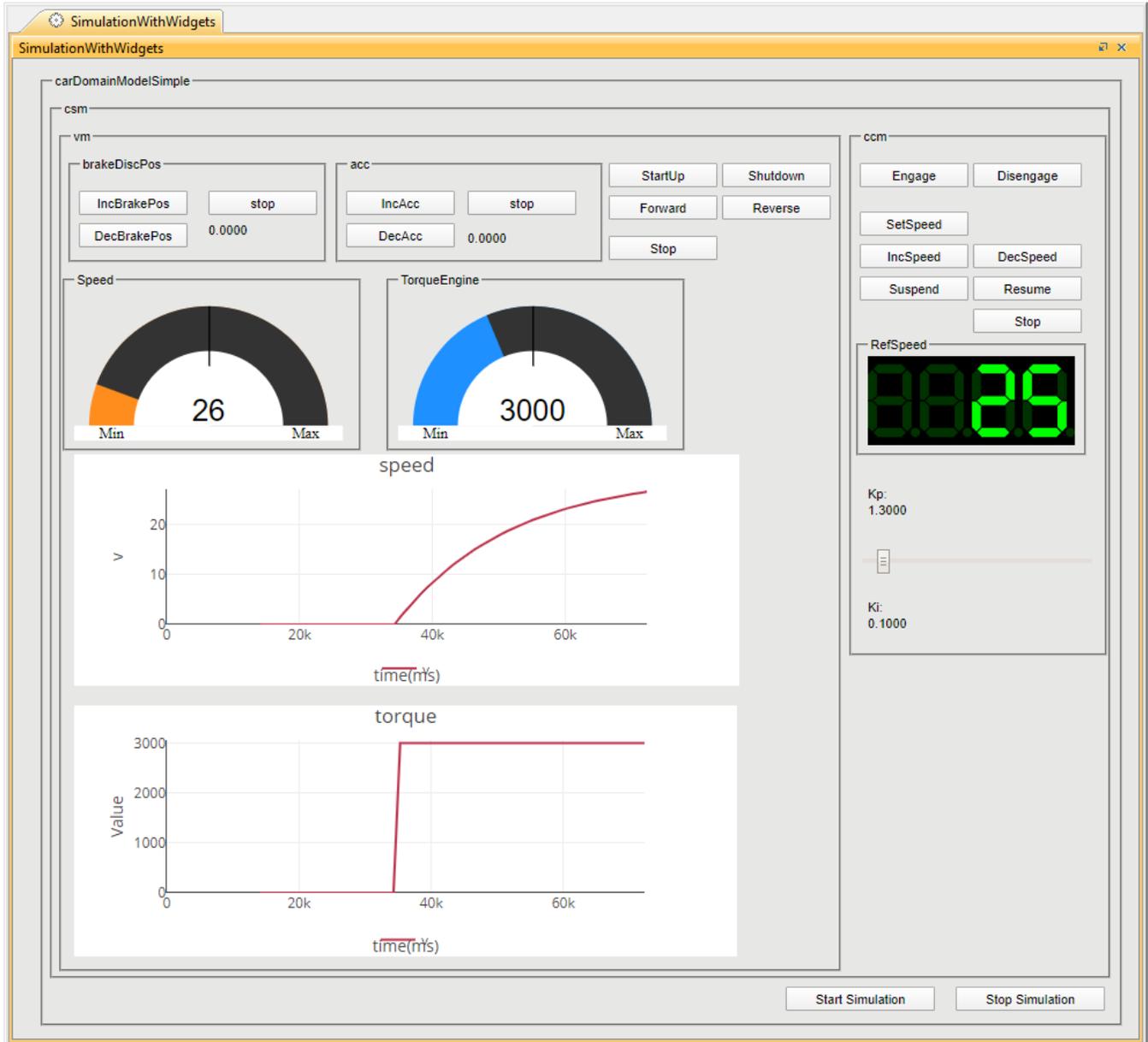
To learn more about available built-in commands, read Dymola User Guide or type ‘help’ in the Dymola console.



Dymola integration.

HTML Widgets in UI Mockups

The previous version of Magic Model Analyst introduced a possibility to integrate HTML widgets into diagrams for simulation. If you have enjoyed this new feature, we have good news - now you can use widgets in UI mockups to improve the visual aspect of UI simulations as well.



HTML widgets integrated in a UI mockup.

Performance Improvements in Large Teamwork Cloud Projects

Model initialization, simulation performance, and memory usage in large projects have been significantly improved (up to 3-4 times).

Improved Text-Based Requirement Verification

Now Magic Model Analyst can automatically extract intervals from text-based requirements. During simulation, these intervals are converted to requirement constraints and validated. In addition, most known issues related to typical condition term recognition have been solved.

The top screenshot displays the Requirements window with a block named «block» Pad and a requirement «requirements» Pad Center Length. The Pad block has parameters: brakeMU : Real = 0.6, width : diameter[metre] = 0.038(unit = metre), centerLength : length[metre] = 0.08(unit = metre), and thickness : length[metre] = 0.01(unit = metre). The requirement text is "The Pad Center Length shall be between 0.075 and 0.14 meters." The Simulation window shows the extracted constraint: Pad (centerLength >= 0.075 && cent... and the following variable values:

Name	Value
Pad (centerLength >= 0.075 && cent...	Pad@7eb5dd3f
brakeMU : Real	0.6000
centerLength : length[metre]	0.0800
thickness : length[metre]	0.0100
width : diameter[metre]	0.0380

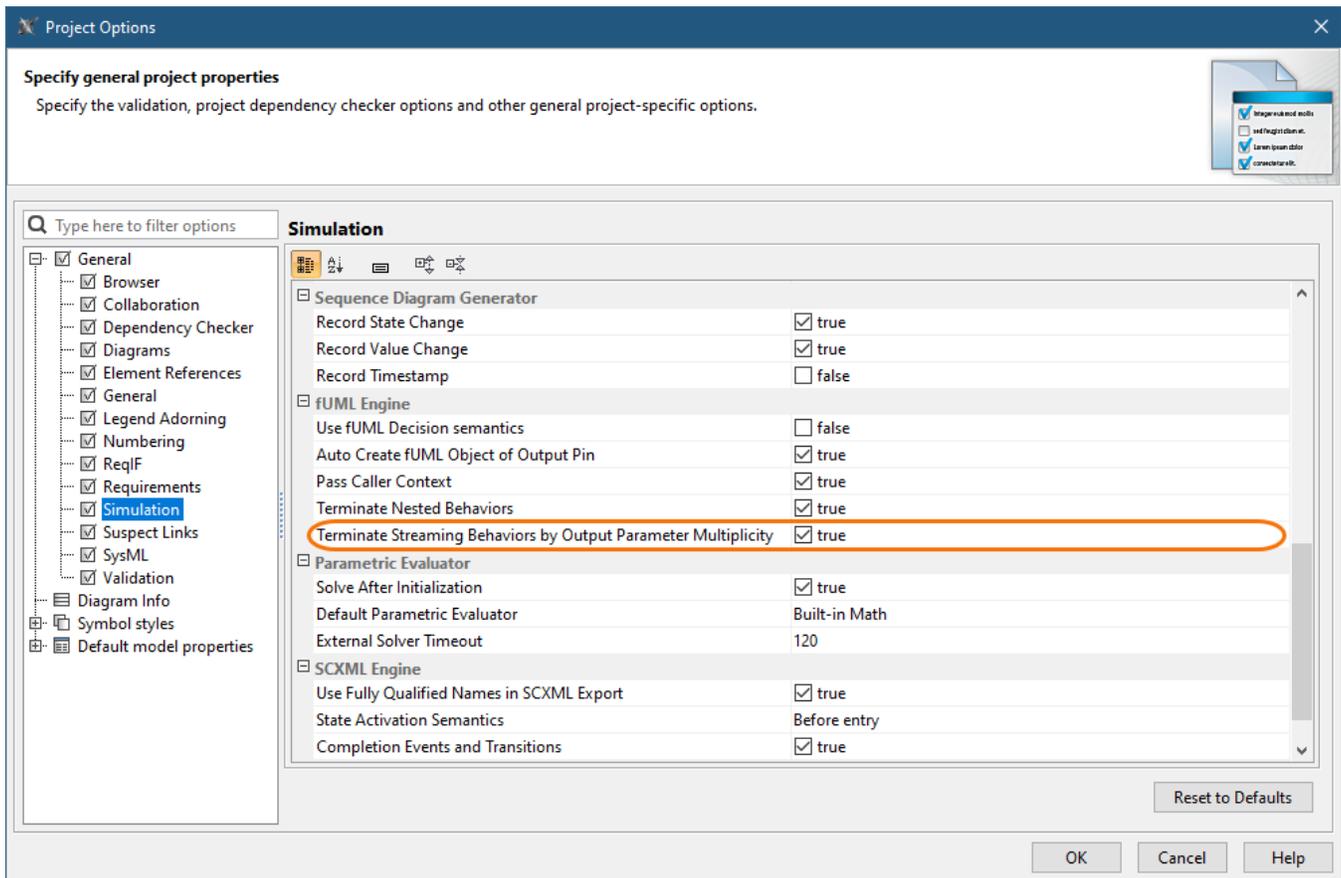
The bottom screenshot displays the Requirements window with a block named «block» Tire and a requirement «requirements» Tires. The Tire block has parameters: tireMU : Real = 0.9 and diameter = 22.0. The requirement text is "The tires shall have 22-inch rolling diameter". The Simulation window shows the extracted constraint: Tire (diameter == 22) and the following variable values:

Name	Value
Tire (diameter == 22)	Tire@6e5cc2d8
diameter	22.0
tireMU : Real	0.9000

Automatic interval extraction from text-based requirements.

Project Option for Terminating Streaming Activities

Now you can terminate the execution of an Activity with streaming output parameters by specifying the output parameter multiplicity. When the **Terminate Streaming Behaviors by Output Parameter Multiplicity** project option (or Simulation Configuration property) is set to *true*, the execution of a streaming Activity will be terminated when the cumulative number of values posted to its output parameters is equal to the parameter multiplicity upper bound.



The highlighted simulation project option allows you to terminate Activities with streaming output parameters by output parameter multiplicity.

New Parameters for Simulation via Command-Line

This version of Magic Model Analyst introduces new optional arguments for the "simulate" command. These arguments will allow you to:

- Specify input parameters with their values.
- Specify the properties file with input parameters.
- Specify the properties file defining what output parameters should be obtained after the simulation.
- Specify the properties whose values should be obtained after the simulation.
- Specify the properties file that will store output parameters with their values.

```
Command Prompt
C:\Program Files\Cameo Systems Modeler 2021xR1\plugins\com.nomagic.magicdraw.simulation>simulate -project SpacecraftMassRollup -config "spacecraft mass analysis" -servertype twcloud -server localhost -login Administrator -password "49034c0439..." -inputs telecom.amplifier.me=10 telecom.antenna.me=15 -outputs me propulsion.me propulsion.tank.me propulsion.thruster.me telecom.me telecom.antenna.me telecom.amplifier.me -outputsFile SpaceCraftMassResults
-project SpacecraftMassRollup -config "spacecraft mass analysis" -servertype twcloud -server localhost -login Administrator -password "49034c0439..." -inputs telecom.amplifier.me=10 telecom.antenna.me=15 -outputs me propulsion.me propulsion.tank.me propulsion.thruster.me telecom.me telecom.antenna.me telecom.amplifier.me -outputsFile SpaceCraftMassResults
Starting MagicDraw...
WARNING: An illegal reflective access operation has occurred
WARNING: Illegal reflective access by com.sun.xml.bind.v2.runtime.reflect.opt.Injector (file:/C:/Program%20Files/Cameo%20Systems%20Modeler%202021xR1/lib/jaxb-impl-2.3.0.jar) to method java.lang.ClassLoader.defineClass(java.lang.String,byte[],int,int)
WARNING: Please consider reporting this to the maintainers of com.sun.xml.bind.v2.runtime.reflect.opt.Injector
WARNING: Use --illegal-access=warn to enable warnings of further illegal reflective access operations
WARNING: All illegal access operations will be denied in a future release
Connecting to Teamwork Cloud...
Simulation config: sim config::spacecraft mass analysis is loaded.
Started executing sim config::spacecraft mass analysis
Finished executing sim config::spacecraft mass analysis
Output parameters are saved in C:\Users\iae2\Documents\SpaceCraftMassResults.properties
C:\Program Files\Cameo Systems Modeler 2021xR1\plugins\com.nomagic.magicdraw.simulation>
```

```
SpaceCraftMassResults.properties
1 me=93.0
2 propulsion.me=68.0
3 propulsion.tank.me=38.0
4 propulsion.thruster.me=30.0
5 telecom.me=25.0
6 telecom.antenna.me=15.0
7 telecom.amplifier.me=10.0
8
```

Simulating a model from the command-line with specified input parameters and the output parameter file.

Documentation

- [Magic Model Analyst 2021x Refresh1](#)

News of earlier versions

- [Magic Model Analyst 2021x](#)
- [Magic Model Analyst 19.0 LTR SP4](#)
- [Magic Model Analyst 19.0 LTR SP3](#)
- [Magic Model Analyst 19.0 LTR SP2](#)