



SIEMENS

Ingenuity for life

Simcenter system simulation solutions 2020.1

- Boosting collaboration and efficiency with new solutions and targeted user experiences
- Enhancing productivity across the enterprise by leveraging interoperability, synergies and a continuous digital thread

Accelerate innovation with application-specific workflows

Benefits

- Accelerate innovation with application-specific workflows
- Boost collaboration and efficiency
- Enhance productivity
- Perform massive batch of computations with HPC capabilities
- Facilitate simulation with an improved user experience

Summary

With the 2020.1 release of Simcenter™ software system simulation solutions, Siemens Digital Industries Software continues to keep pace with the industry's rapid technological evolution. With this update the Simcenter simulation factory becomes even more customizable and easy to use. With environmentally sustainable design and performance expectations, the race for electrification, new mobility, stringent regulations and quality and safety requirements, Simcenter system simulation solutions enhance productivity across the enterprise. Its interoperability and synergies boost collaboration and efficiency with new solutions and targeted user experiences to help accelerate innovation in this fast-evolving environment.

For this release, new capabilities focus on three main areas:

- Accelerating innovation and rapidly meeting changing customer preferences with application-specific workflows

Simcenter Amesim 2020.1

- Aerospace: gas turbine performance tool
- Electrical systems: fuel cell vehicle in hybrid optimization tool (HOT) and equivalent consumption minimization strategy (ECMS)
- Automotive: three-way catalyst (TWC)
- Fluid systems: two-phase flow mixture
- Platform: computer-aided design (CAD) Import Data Exchange

The new 2020.1 version of Simcenter Amesim™ software brings more accuracy and speed for setup, measurements and simulation results. For example, in the aerospace industry, an improved gas turbine performance tool eases parametrization and performance assessment, thereby helping reduce time to set up the model by a factor of 100.

For electrification, Simcenter Amesim 2020.1 can be used to quickly evaluate architecture design options and performance of a fuel cell hybrid electrical vehicle using the improved hybrid optimization tool and equivalent consumption minimization strategy. For

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the automotive industry specifically, a major update of the three-way catalyst calibration workflows supports test data and hydrocarbon (HC) species, reducing time spent and enhancing the accuracy of TWC calibration.

It is also now possible to define the composition of a two-phase flow fluid mixture and calculate its thermodynamic properties to optimize constituents' proportion of a refrigerant mixture and assess cycle performance.

In addition, with Simcenter Amesim you can import native CAD format with

software used in your company to retrieve the exact measurement no matter which native software was used to build the CAD.

Simcenter Flomaster 2020.1

- New pipe models
- Functional Mock-up Interface (FMI) import
- Side-by-side install
- Live sensors

For Simcenter Flomaster™ software 2020.1, a new pipe model enables the

simulation of visco-elastic and non-Newtonian behavior. The first capability allows the user to accurately model the nonlinear response of polymer pipes to a pressure surge event while the second responds to the need of industry to model the non-Newtonian behavior of a variety of fluids like slurries, blood and apple sauce, just to cite a few.

To boost collaboration and efficiency, Simcenter Flomaster 2020.1 offers an enhanced user experience. Simcenter Flomaster 2020.1 includes FMI import for model exchange and co-simulation, further extending its interoperability solutions. Additionally, the new side-by-side install allows users to run different Simcenter Flomaster versions on the same client. Furthermore, this new version extends the work done on visual physics by introducing live sensors. With live sensors it is possible to display any result at discrete points of the network using numeric results, linear meters or gauges. This allows users to understand the system behavior at a glance.

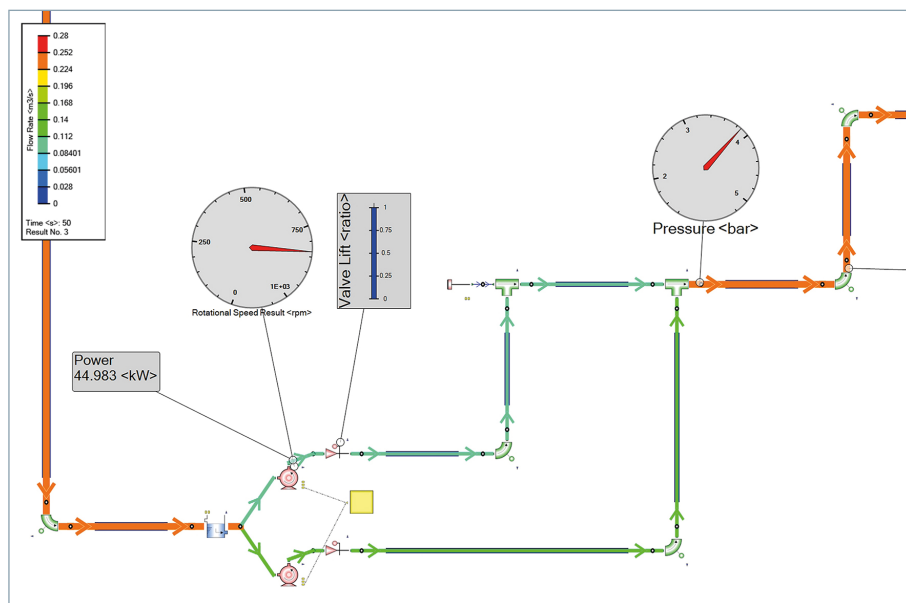
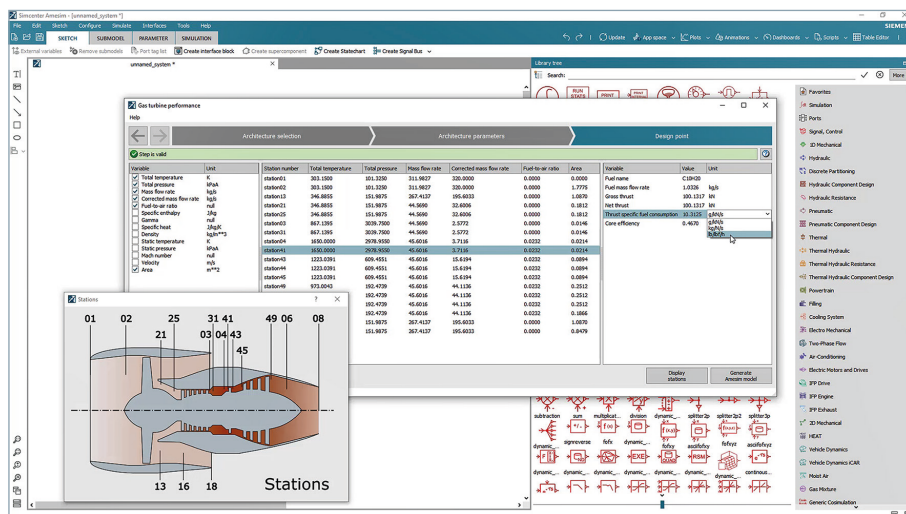
Simcenter System Analyst 2020.1

- Taskpad variability
- High-performance computing (HPC)

Simcenter System Analyst software 2020.1 version allows automation of model configurations. In a few clicks, you can configure and parameterize a model in the taskpad. Both the simulation and postprocessing phases of projects with multiple configurations and parameter sets has become even more automated. In addition, you can now export, run and locally postprocess your taskpads on your HPC server and retrieve results to perform a massive batch of taskpad computation, benefiting from your HPC capabilities.

Simcenter System Architect 2020.1

- Extension of Attributes on Simulation Templates and Instrumented Models
- Multi-level Simulation Architecture enhancements



Simcenter System Architect software 2020.1 streamlines the user experience. By implementing the model identity card (MIC) attributes, you ensure that model attributes are seamlessly defined and identically shared among simulation architects, domain experts and project engineers. Further, you can select multiple simulation templates and group them to simplify navigation of complex simulation architectures.

Simcenter Sysdm 2020.1

- Simcenter System Analyst integration

The highlight of the new version of Simcenter Sysdm is that it is integrated

with Simcenter System Analyst. This provides traceability and consistency of resources that are shared among simulation architects, domain experts and project engineers.

Simcenter Webapp Server 2020.1

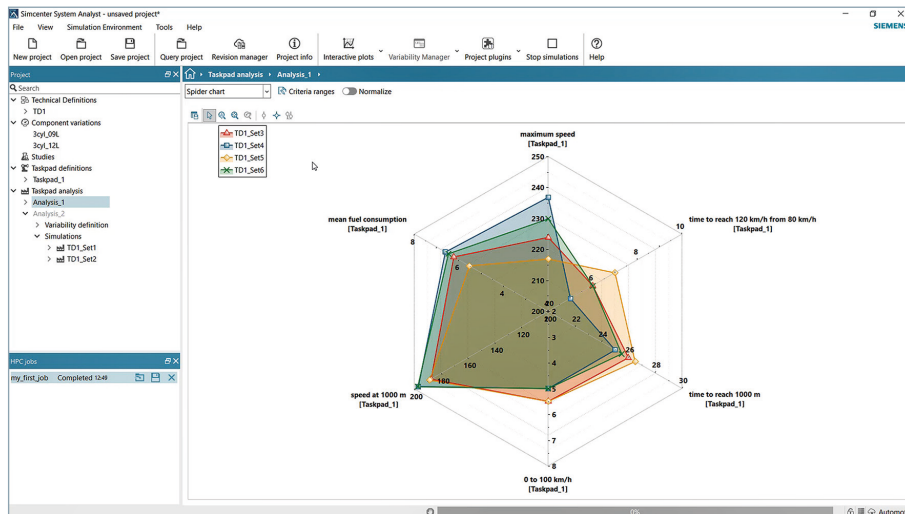
- Functional Mock-up Interface
- Results layout
- Run model via Microsoft Excel spreadsheet software

Simcenter Webapp Server supports Functional Mock-up Units (FMU) along with native Simcenter Amesim models. The model owner can generate

standalone FMU 2.0 for co-simulation within his authoring tool and upload it onto Simcenter Webapp Server. A dedicated web user interface is then available to select the parameters and variables of interest within the FMU. All other functionalities of Simcenter Webapp Server (results layout, sharing mechanism, etc.) are fully compatible with FMUs.

After uploading a model to Simcenter Webapp Server, the model owner can define a results layout that allows you to customize the view of the results for the model consumer. Several plot types are available: temporal plots, XY plots, spider charts, bar charts and polar plots. This capability is fully compatible with the postprocessing variables defined in Simcenter Amesim. The results layout allows the model consumer to directly view results tailored to his or her needs.

Finally, the Simcenter Webapp Server 2020.1 version now combines the versatility of Microsoft Excel with the centralized model deployment of Simcenter Webapp Server. You can manipulate models and parameters, run simulations and analyze results directly with Microsoft Excel using Visual Basic for the application programming interface (API).



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