Simcenter Flomaster

Reducing costs while improving the safety of all complex thermofluid systems
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Benefits

- Reduce operating costs while improving the safety of all complex thermofluid systems

- Reduce time-to-market and cost with thermofluid systems simulation

- Provide safe and efficient operation of thermofluid systems in any scenario

- Unleash the power of design space exploration to quickly discover improved designs

- Maximize ROI by leveraging the comprehensive digital twin of your thermofluid systems throughout its lifecycle

Summary

Fluid systems play key roles in all industries. They are used for a range of tasks from cooling and heating, transporting products, energy production to establishing the safety of the entire plant. Optimizing their performance and making sure they operate safely at all times is paramount.

Fluid system simulation allows you to size and balance your thermofluid system early in the design phase. It enables you to model different operating conditions of your system to make sure it will consistently operate at maximum efficiency.

Simcenter™ Flomaster™ software, which is a part of the Xcelerator™ portfolio, the comprehensive and integrated portfolio of software and services from Siemens Digital Industries Software, is a leading simulation tool for fluids engineering. It offers reliable and accurate solvers and best-in-class, built-in correlations. This means that you can achieve maximum efficiency by sizing individual components to optimize entire gas, liquid and two-phase systems.

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Features

- Accurate simulation results with best-in-class solvers and built-in correlations

- Several ways to visualize any result directly on the model

- Ready-to-use components characterized by data from *Internal Flow Systems* by Donald Miller

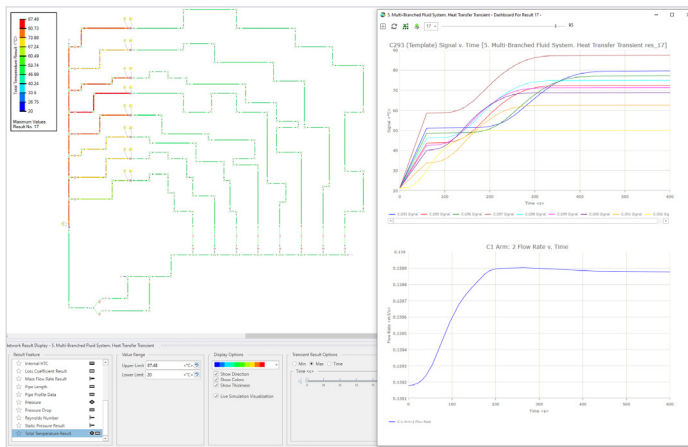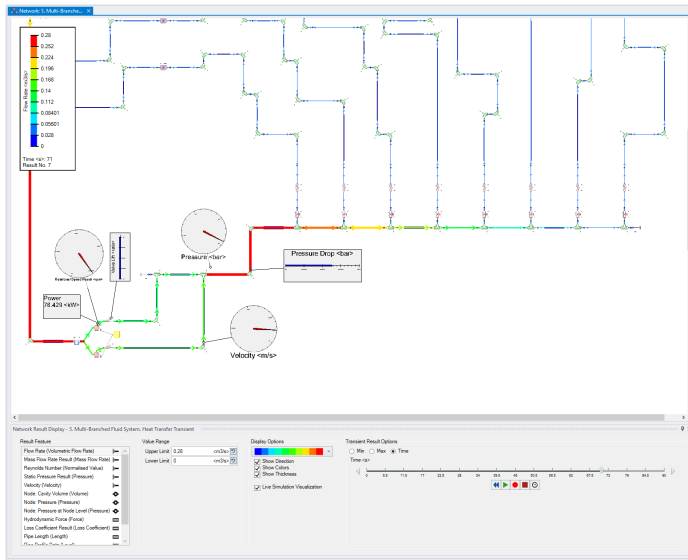- Access to CAPE-OPEN, which allows fluid properties to be automatically imported

Thanks to the fast, reliable and rigorously tested, transient solvers, you can analyze complex physical phenomena that are critical to establishing safe and efficient operation of your thermofluid systems.

Simcenter Flomaster offers a comprehensive simulation toolset for designing, commissioning and operating thermofluid systems. This means that the system's digital twin developed during the engineering phase can be re-used during operation for virtual sensing and on-line monitoring to improve efficiency and safety.
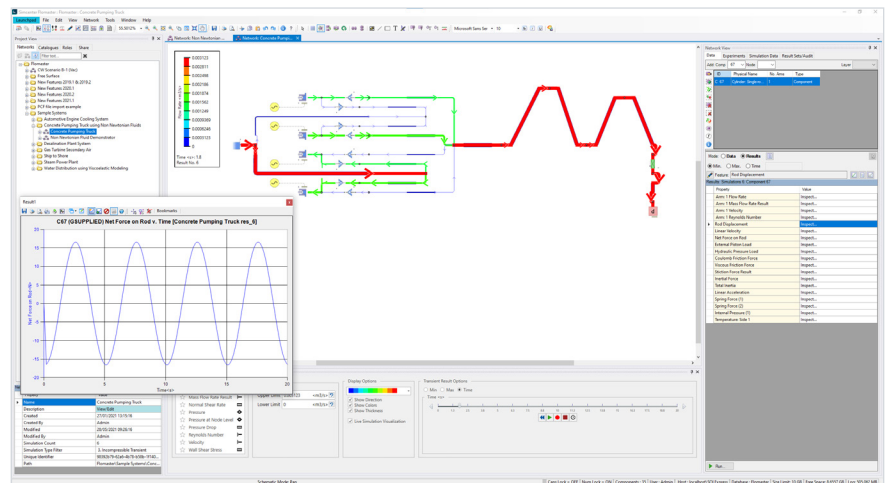
The extensive connectivity provided by Simcenter Flomaster allows you to embrace digital transformation and innovate quickly. This includes connectivity to other relevant tools and platforms such as product lifecycle management (PLM), computer-aided design (CAD), simulation and industrial internet of things (IIoT). In addition to supporting the Functional Mockup Interface (FMI), Simcenter Flomaster provides interfaces for 3D computational fluid dynamics (CFD) for simulation-based characterization of bespoke components and co-simulation.

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Simcenter Flomaster also allows you to improve system performance by working outside traditional optimization approaches. Design exploration provides efficient optimization and insight into design constraints. You can visualize design performance tradeoffs between competing objectives and constraints and make informed decisions while discovering innovative solutions.