



PRODUCT DATASHEET

AVEVA™

SIMCENTRAL SIMULATION PLATFORM

Process Simulation, Reinvented

Simulation tools used by process engineers in the Oil & Gas, Refining, Utility and Chemical industries trace their origins to legacy architectures, operating systems and user interfaces. Global competition, pricing pressure and energy alternatives are now driving the need for a new approach. The next generation of workers also expects a modern, scalable and easy to use solutions with technology they now take for granted – high speed Internet access, mobile devices, touch screens and virtual reality.

SimCentral Simulation Platform is the first commercially available platform designed to take advantage of developing web-based and cloud technologies while delivering a modern user experience that will allow your workforce to be more productive, creative, and inspired.



Summary

SimCentral Simulation Platform is the innovative, integrated simulation platform covering the entire plant engineering lifecycle of design, simulation & training, and optimization. The current release of SimCentral Simulation Platform focuses on utilities modeling for steam systems, cooling water systems, and flare networks.

Business Value

- Increased ease of use
- Simple and efficient customization
- Improved collaboration
- Global user accessibility
- Reduced total cost of ownership

Introduction

SimCentral Simulation Platform is a simulation-driven engineering platform that provides:

- **Unified Lifecycle Engineering:** SimCentral Simulation Platform is the first industrial simulation platform developed from the ground up to support steady state, fluid flow, and dynamic modeling in one environment for unified lifecycle support. One extensible model for the entire plant lifecycle.
- **Agile Custom Development:** SimCentral Simulation Platform changes the engineering workflow by promoting collaboration—allowing users to work concurrently on the same model, across departments, regional time zones and between Engineering Procurement and Construction companies. SimCentral Simulation Platform includes a model writing environment that allows to simulate custom and proprietary processes.
- **Entices the Next Generation:** SimCentral Simulation Platform embraces modern software architecture and interfaces to exceed the expectations of users to accelerate adoption, usage and time-to-value.

SimCentral Simulation Platform for Process Utilities

This is the first release in decades that comprises a process simulator built from the ground up. It offers an intuitive user experience far superior than competitive offerings to uniquely address the needs of Engineering, Procurement and Construction (EPC) firms, Operating companies and Process Licensors. It is the first commercially available platform designed to take advantage of developing web-based and cloud technologies while delivering a modern user experience. SimCentral Simulation Platform for Process Utilities embraces the expectations of the next generation of users to accelerate adoption, usage and time-to-value.

Key Features

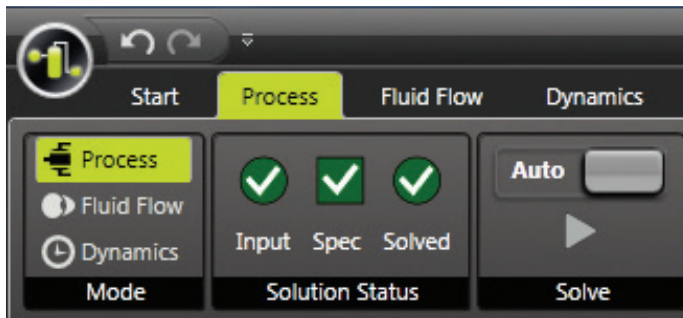
- Effortlessly solve difficult problems through automatic, flexible and smart algorithms
- Scalable modeling, from small to big and from simple to complex, through multi-core thermodynamics, scalable architecture
- Easily write custom models libraries for new processes and industries without any software programming
- Promote collaboration with access to the same simulation from multiple computers, and by multiple users
- Multiple simulation modes in one application reduces the cost of maintenance and drives efficiency
- Improve productivity by saving sets of data with the ability to revert back to a specific set of data/ results at any time



Solution Modes

SimCentral Simulation Platform offers three calculation modes:

- **Process:** Design mode to perform steam balances and calculate turbine power production
- **Fluid Flow:** Rating mode shows header pressures at the far end of the plant
- **Dynamics:** Simulation mode evaluates header pressure control strategy after an upset



SimCentral Simulation Platform solution modes

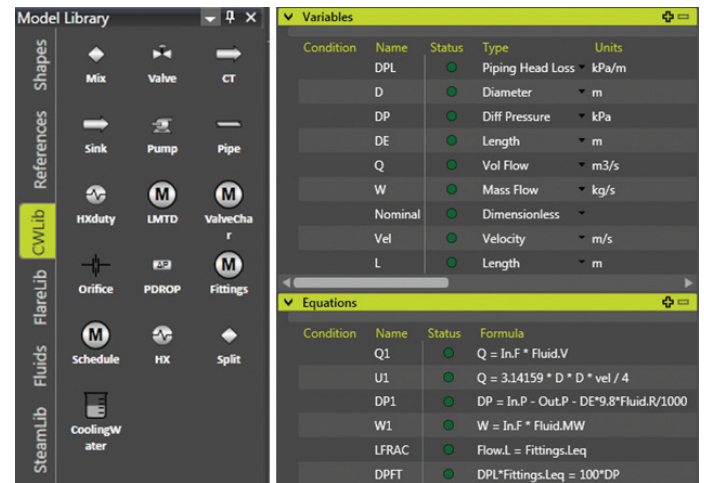
Solution Platform

Once the mode is selected, the solver decomposes equation blocks and solves them in the best sequence. The SimCentral Simulation Platform solver:

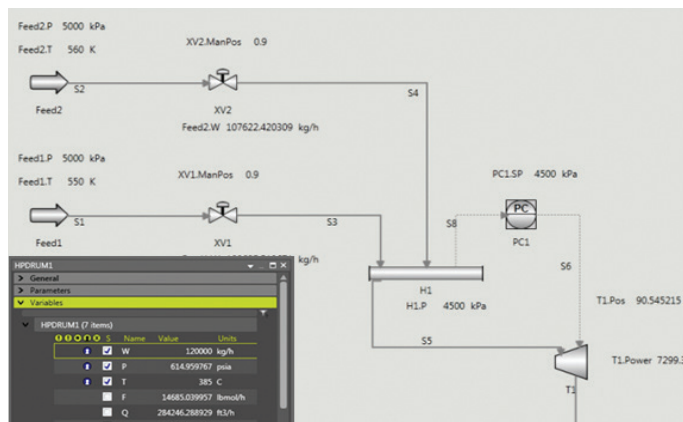
- Allows any variable to be specified
- Interactively processes user equations or models
- Solves the model automatically when the simulation is specified properly
- Skips sections/units of the model that are already solved for fast response

Models and Libraries

- Standard model libraries provide a balance between a general platform and specialized applications. Currently supported libraries include:
 - Cooling Water
 - Steam
 - Flare
 - Fluids
 - Transient Flow
 - Process
- Customize standard models to fit specific needs
- Create brand new libraries with minimal effort



SimCentral Simulation Platform Model Library



SimCentral Simulation Platform process flowsheet with data entry

Customization

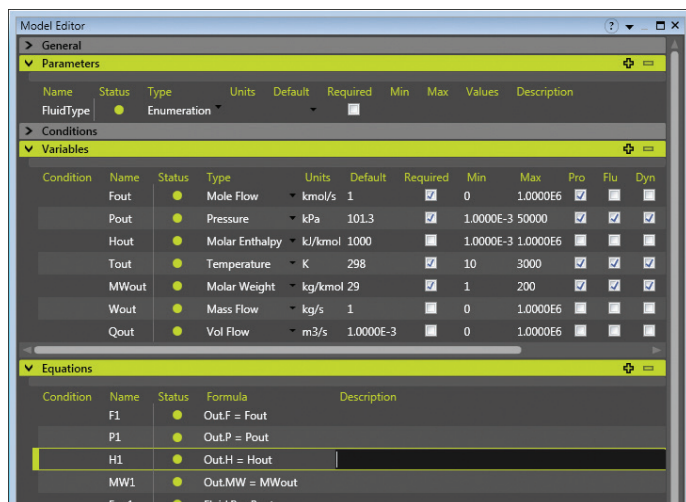
By default, SimCentral Simulation Platform offers standard libraries of fluids, thermodynamics, and unit operations. SimCentral Simulation Platform allows customization of these features to fit your specific needs.

Custom Models

While the standard Cooling water (CW), Steam, and Flare libraries provide best of both worlds—a dedicated tool and a common platform—the ability to develop custom libraries can help solve new problems in a shared tool; for example, a Water Hammer library.

As well, SimCentral Simulation Platform provides the ability to write custom equations within existing models or create completely new unit operations without any software programming. Custom models:

- Require no need to know FORTRAN, C++ or C#; simply write equations in natural equation form
- Promote reusable/extendable submodels
- Support both model writing roles
 - Casual users can make modifications
 - Sophisticated users can write entire models



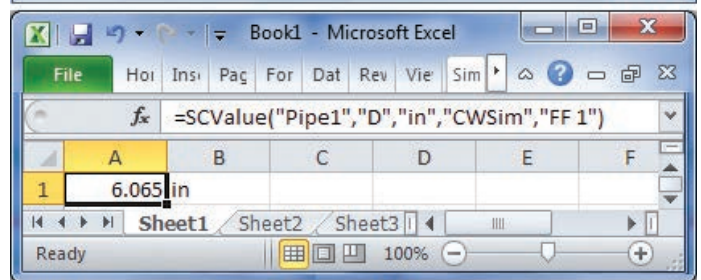
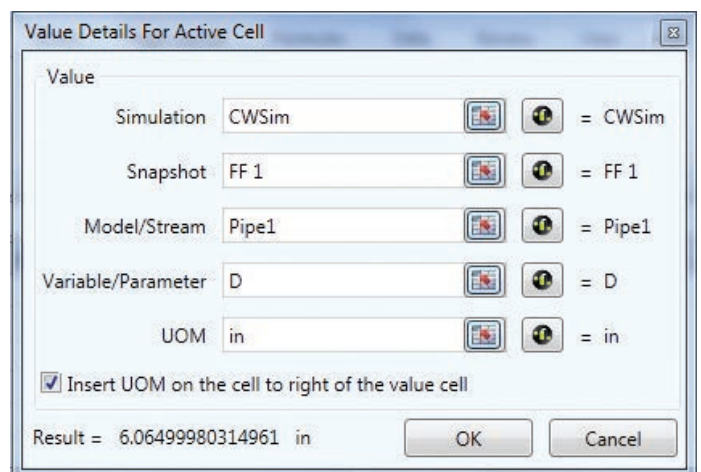
Writing custom models in SimCentral Simulation Platform

Microsoft Excel Add-in

The Microsoft Excel Add-in for SimCentral Simulation Platform reporting allows end users to design functions for the way people truly use Excel. The add-in supports common Excel functionality, including:

- Separate units and variables
- Stretch cells to fill tables
- Compare multiple cases

Data entry forms make adding and manipulating functions within SimCentral Simulation Platform easy to do.



Adding Microsoft Excel functions to SimCentral Simulation Platform

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