



## PRODUCT DATASHEET

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# AVEVA™ Process Simulation formerly SimCentral

## Create the Digital Twin for your entire process plant lifecycle

Plants are becoming more complex and more tightly integrated. Companies must bring new processes and products to market more quickly. Engineering departments stretch around the globe and must respond to changing conditions while incorporating a new generation of engineers. Legacy process simulators are ill-suited to these challenges. AVEVA Process Simulation is designed from the ground up to enable the next generation of engineers and deliver the process side of the Digital Twin.

AVEVA Process Simulation is the first commercially available platform to take advantage of developing web-based and cloud technologies to deliver an enjoyable user experience so that engineers will be more productive, collaborative, creative and inspired.

# Overview

AVEVA Process Simulation is an innovative, integrated platform covering the entire process engineering lifecycle of design, simulation and training. The current release of AVEVA Process Simulation provides significant advantages over legacy software programs for chemical process simulation, process utilities and flare systems.

## Business Value

- Digital Transformation. Integrate process engineering with the Digital Twin.
- Lifecycle Simulation. Reuse the same simulation over all engineering phases.
- Faster Adoption. Replace up to 50 programs used in a typical process engineering department with a single, easy-to-use interface.
- Multi-discipline Collaboration. Change the engineering workflow with concurrent use by process, utility, control, and mechanical engineers.
- Retain top talent. Make engineering less about button pressing and more about creative problem solving.

## Support the process model lifecycle in a single platform

### Newly designed from the ground up

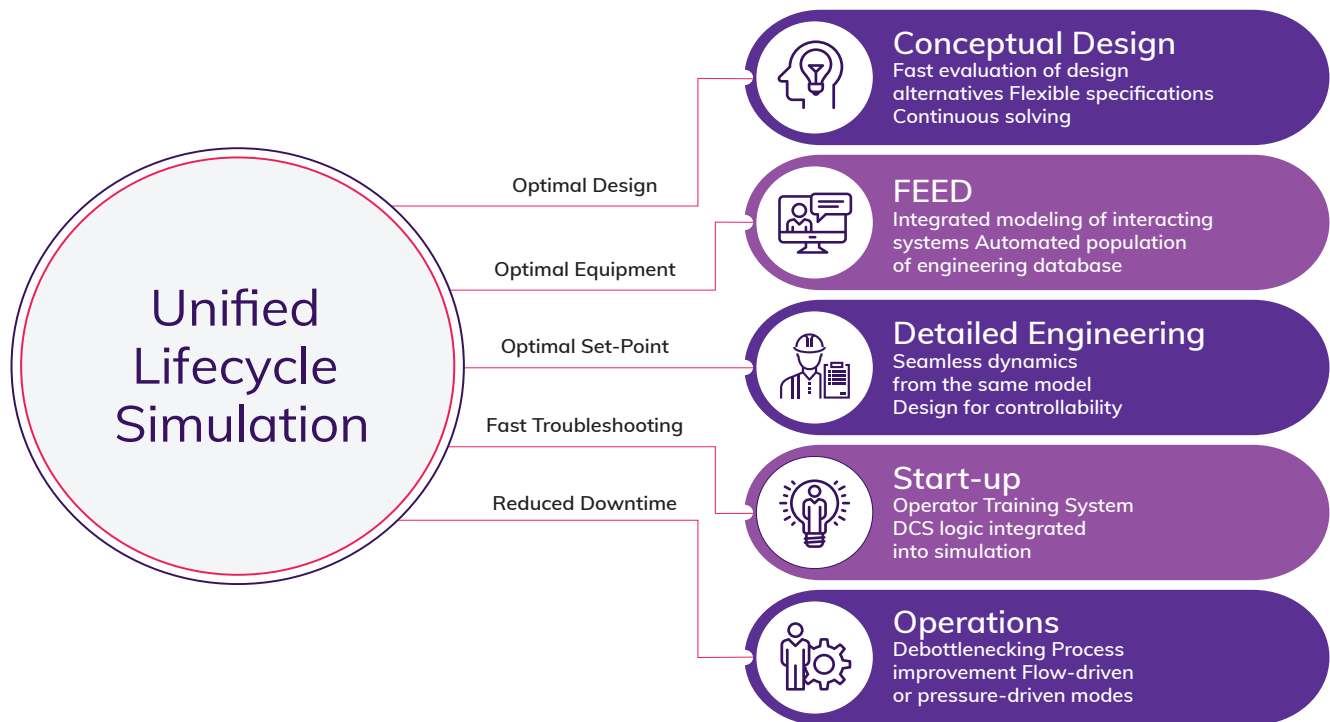
- Modern multi-user software architecture
- Multi-core computing for extreme speed
- Role-based user interface shows each user the proper level of detail

### Enable the next generation of engineers

- Groundbreaking ease-of-use with modern standards
- Intuitive user interface using badges and notifications
- Instantaneous results - no more run button

### Deliver the process side of the Digital Twin

- Design, Rating and Dynamics modes in a single simulation
- Switch between modes anytime in any direction
- Write custom models with no programming
- Integrated with AVEVA Unified Engineering

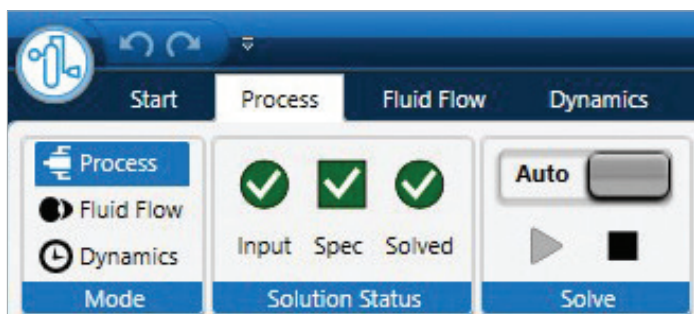


# AVEVA Process Simulation Features

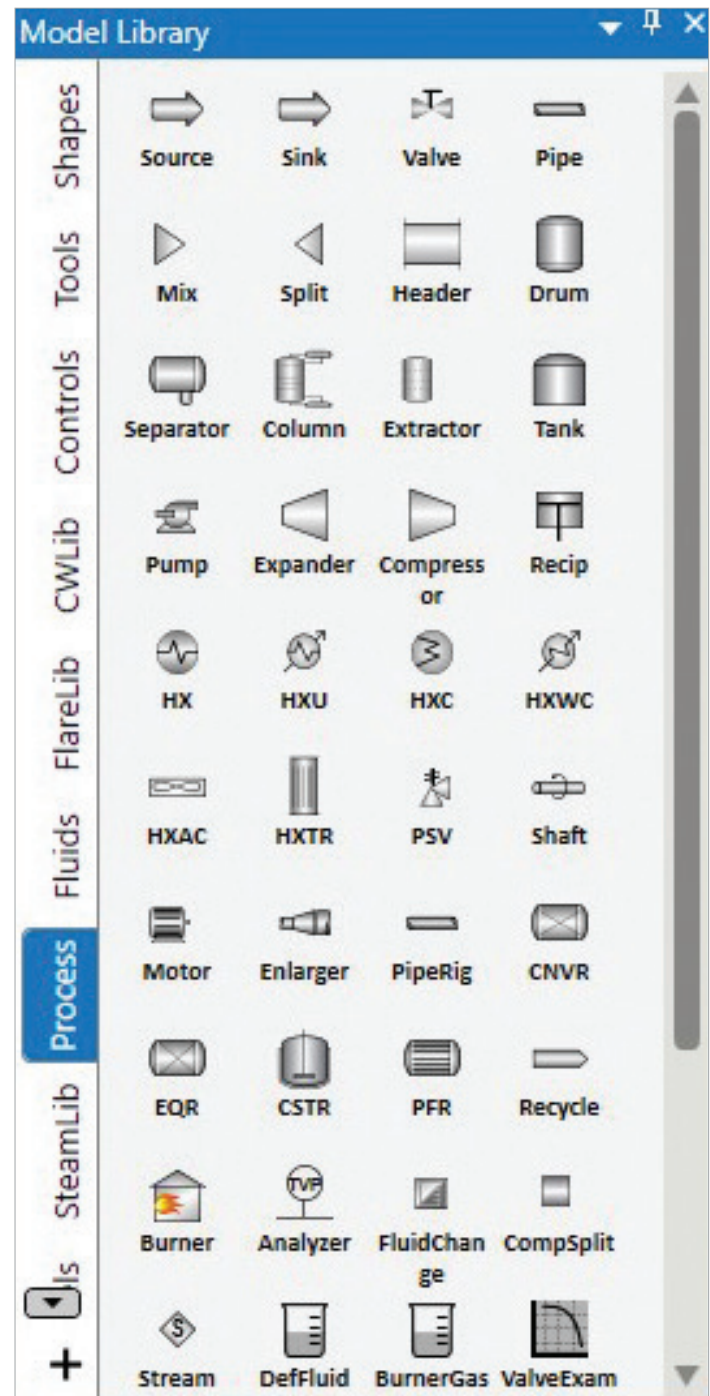
AVEVA Process Simulation is a platform for process, utility, and flare simulation. Each platform application uses the same user interface and solution engine so that all engineers can perform any functions in the same software environment.

- Ease-of-use
  - Specify any variable
  - Undo changes
  - Continuously solved with immediate feedback
  - Snapshots of previous results
  - Trends, tables and profiles
  - Fit for purpose model libraries
  - Units of measure
- Solution power
  - Full equation-oriented modeling
  - Open model writing
  - Fully implicit dynamic integration
- Customization and adaptability
  - Customize any standard model
  - Import scanned performance curves
  - Historian external data interface
  - Excel reporting

Change modes anytime and in any direction among flow-driven steady state mode (Process), pressure-driven rating (Fluid Flow) and Dynamics.



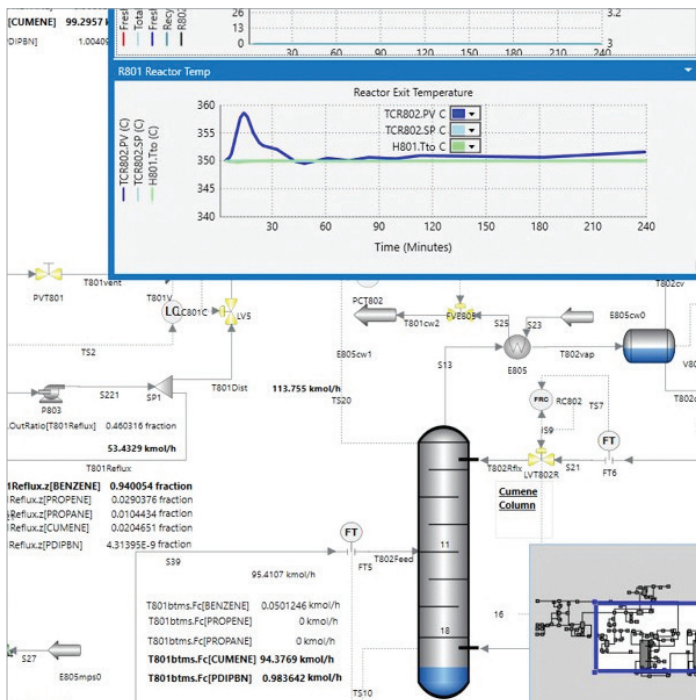
Standard model libraries provide a balance between a general platform and specialized applications.



## Chemical Processes

AVEVA Process Simulation is ideal for chemical process simulation, especially complex systems with lots of recycles where conventional simulators perform very slowly.

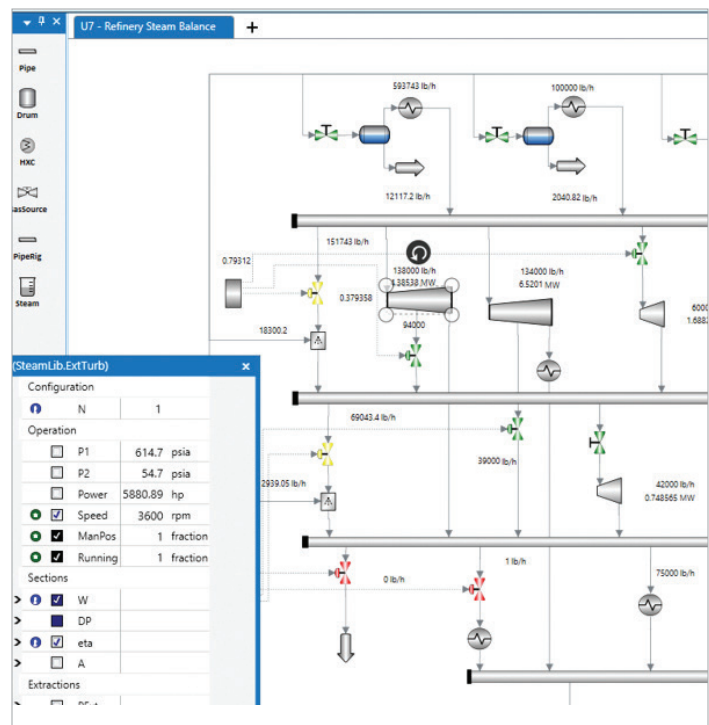
- Process library with distillation columns, reactors, heat exchangers, compressors and other common unit operations
- Fluid thermodynamics methods such as SRK, SRKM, PR, PRM, NRTL, UNIQUAC, UNIFAC, Wilson, Hayden O'Connell, IF97, with more added each release
- Interface to SimSci Thermodynamics Data Manager to define custom components
- Simulation-independent fluid object which can be defined with custom components and reused throughout your organization
- Easy-to-use optimization tool to optimize process designs such as finding the ideal plug flow reactor length
- Integrated dynamic simulation for better distillation column relief load calculations



## Process Utilities

Process utility engineers can use a single simulation for cooling water or steam balances, and then mode change to perform a piping flow network analysis and dynamic simulation.

- Steam library with extraction turbines, desuperheaters and condensers
- Cooling water library with supply, return, pipes, pumps and exchangers
- Transient Flow library for water hammer and pressure surge analysis
- Fluid thermodynamics methods such as steam (IF97), cooling water, other heat transfer mediums



## Flare Networks

AVEVA Process Simulation's flare library provides an easy way to evaluate multiple relief scenarios and immediately see pressure predictions. Flare networks are evaluated in the same software environment as chemical processes and process utilities for easy coordination of engineering changes.

- Flare library with relief valves, tail pipes and flare stacks
- Robust flare network solutions especially with multiple stacks and crossovers



## Preserve knowledge in custom models

Intuitive, open modeling features help engineers extend process models to incorporate their company's proprietary knowledge.

- Extend existing library models
- Create completely new models
- Write equations in natural form
- No need for FORTRAN, C# or other programming

## Share your unique modeling capability

Custom models can be packaged into libraries which can be exported and shared with other AVEVA Process Simulation users within your organization.

## Integrated with AVEVA Unified Engineering

Unified Engineering enables multi-discipline collaboration of conceptual, FEED and detailed design with seamless information flow from one single data hub.

- Validate design interactively
- Applications communicate directly
- Enter data once, reuse multiple times

## Cloud empowerment through AVEVA Connect

AVEVA Connect enables new levels of collaboration, productivity and effectiveness across the operational and engineering lifecycles. Connect is a single hub for cloud access to AVEVA solutions including AVEVA Process Simulation.

For more information on AVEVA Process Simulation, please visit [sw.aveva.com/engineer-procure-construct/process-engineering-and-simulation/aveva-process-simulation](https://sw.aveva.com/engineer-procure-construct/process-engineering-and-simulation/aveva-process-simulation)

