AVEVA™ Process Simulation

Built from the ground up, delivering the process digital twin,
to the next generation of engineers.

Americas Advisory Group Meeting
Cal Depew, AVEVA Simulation Product Director

16 October 2020

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01 **Vision of AVEVA Process Simulation**

02 New Features since last year

03 Roadmap

04 Feedback and Comments

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The Process Side of Digital Transformation

Designed from the ground up, delivering the process digital twin, to the next generation of engineers

Designed from the Ground Up

- Multi-core
- Continuously Saved
- Role based user interface
- Open model writing

Delivering the Process Digital Twin

- Design, Rating and Dynamic Mode
- Standard Libraries for different Assets
- One single model for the entire asset lifecycle

To the Next Generation of Process Engineers

- Groundbreaking Ease of Use
- Instantaneous results
- Intuitive User Interface

50% reduction in simulation effort across the lifecycle

Collaboration internally and externally

Improved engineering workflow

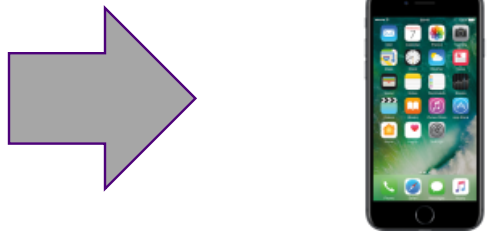
Enables True Digital Transformation

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Reduce Total Ownership Cost and Process Engineering Hours

A unified environment improves personnel utilization, IT accessibility, cross tool integration, and reduce s software training

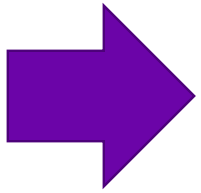


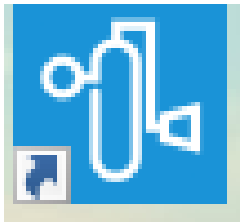


Like a smart phone,

the total value is much higher than the sum of the pieces.

Steady State	Process Utilities	Hydraulics	Spread-sheets
Dynamic Sim	Flares	Water Hammer	Home Grown





A Typical EPC Process Engineering Department has over 50 applications that they use on a regular basis.

Slido Q1

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AVEVA™ Process Simulation

Designed from the ground up, delivering the process digital twin, to the next generation of process engineers

Ease of Use

The **continuously-solved** and **highly-interactive** behavior with **Undo** enables rapid problem exploration and fast adoption by next-generation users.

SimSci Thermodynamics

Proven **SimSci** thermodynamics and data import based on industry standards provides high-speed and accurate solutions with all major **thermo methods**.

Library Approach

Model libraries for process utilities (**steam**, **cooling water**, **flares**), as well as **process** simulation allows a common platform for process department simulation.

Equation-Oriented Solver

A robust **equation-oriented solver** using state-of-the-art numerics allows for efficient calculation especially when there are lots of recycles.

Open Modeling

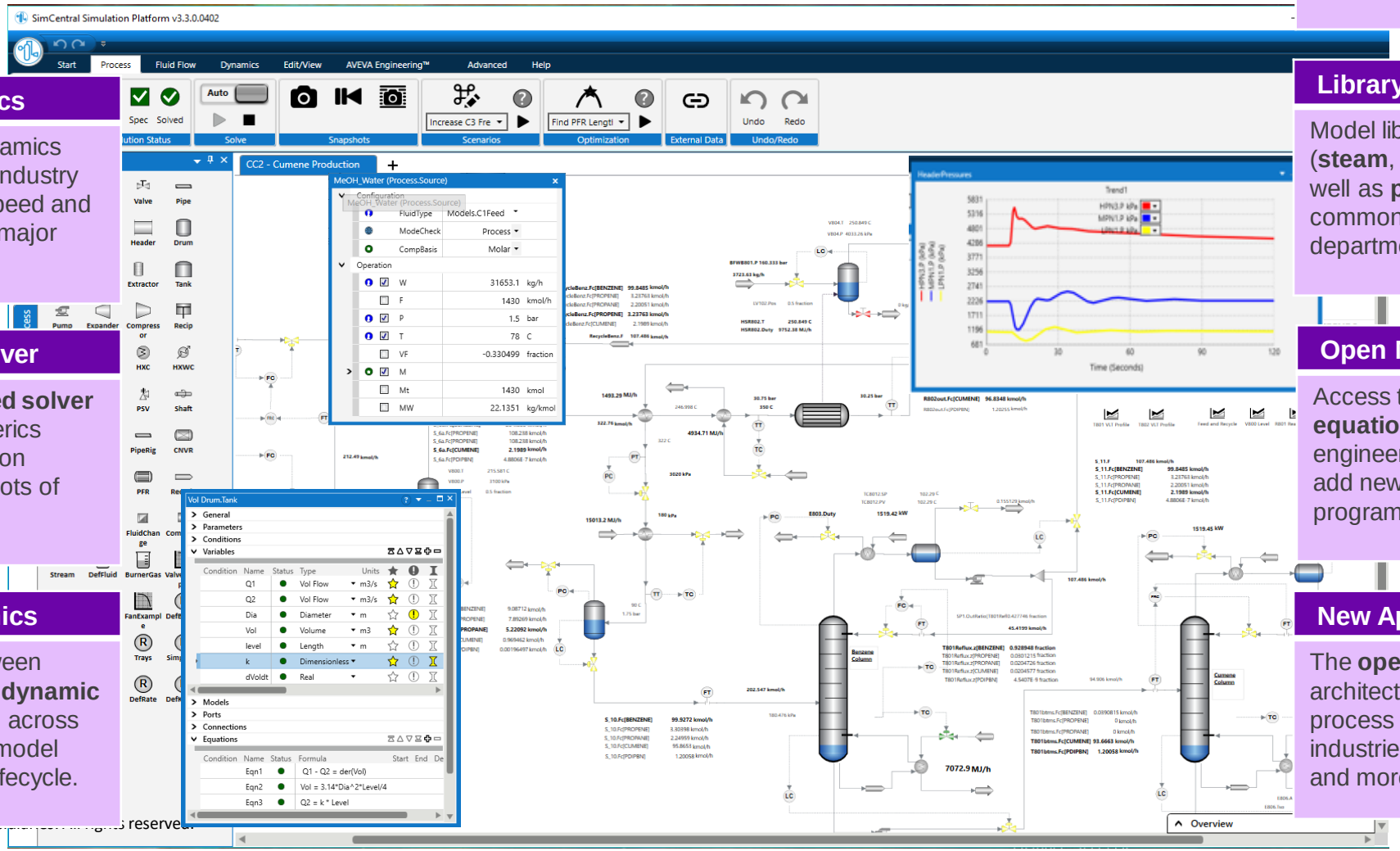
Access to the **mathematical equations** enables process engineers to both customize and add new equipment models without programming.

Steady-State & Dynamics

Seamless switching between **steady state, rating,** and **dynamic** modes drives collaboration across engineering domains and model reuse through the project lifecycle.

New Applications

The **open platform extendable** architecture allows the expansion of process simulation into other industries such as batch, power, and more

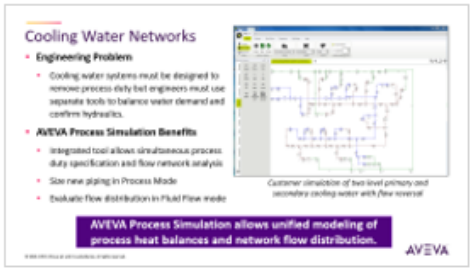


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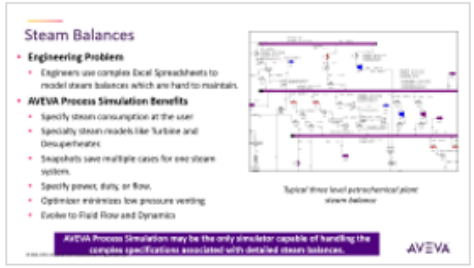
AVEVA Process Simulation Capabilities Slide 1 of 2

Slido
Q4

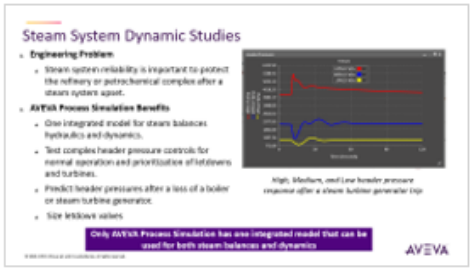
Cooling water networks



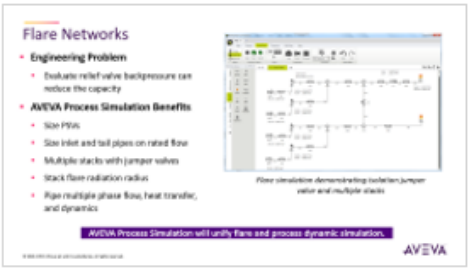
Steam balances



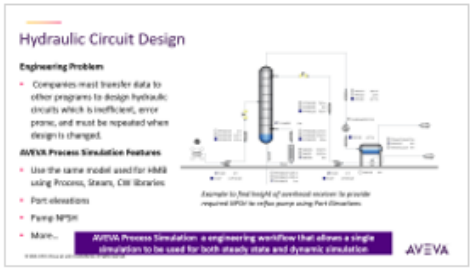
Steam dynamic studies



Flare systems



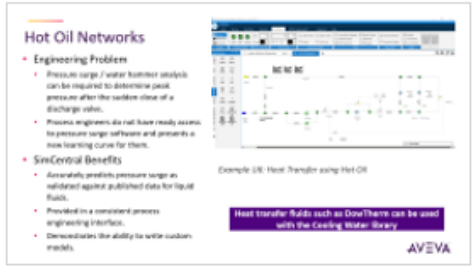
Hydraulic Circuit Design



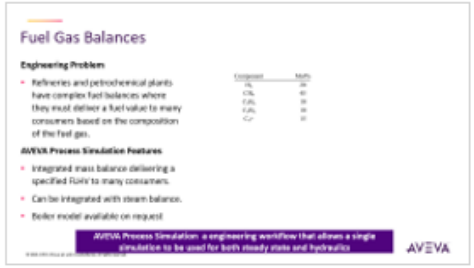
Vacuum transfer lines



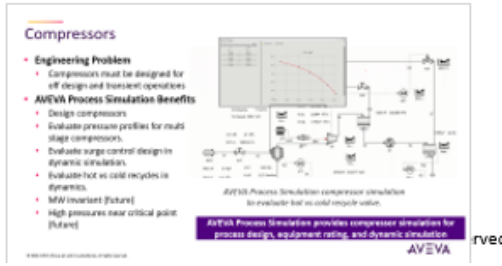
Hot oil networks



Fuel gas balances

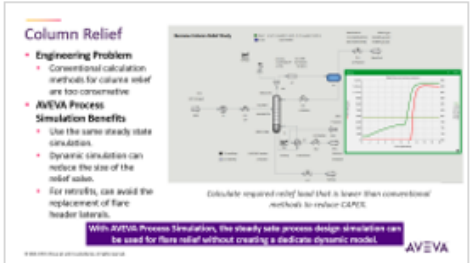


Compressor Dynamics

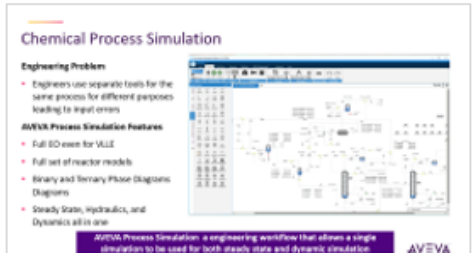


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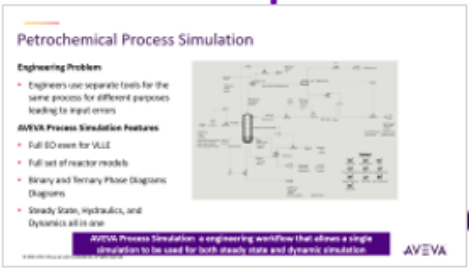
Column Relief



Chemical processes



Petrochemical processes

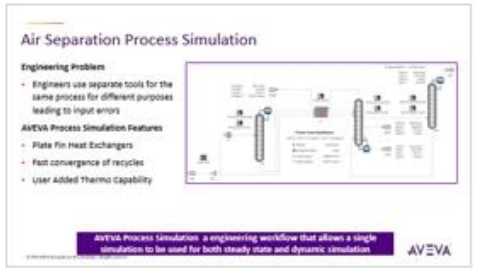


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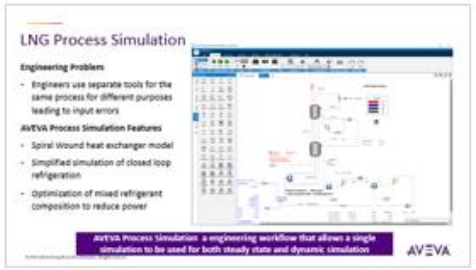
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AVEVA Process Simulation Capabilities Slide 2 of 2

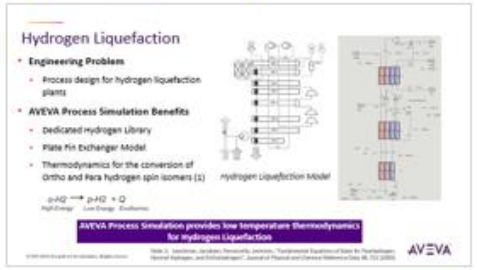
Air separation



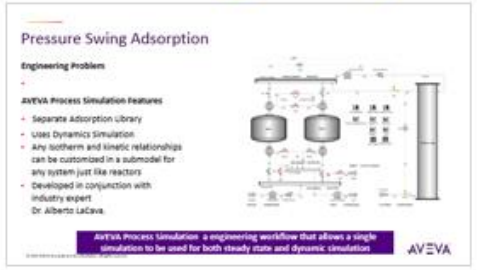
LNG processes



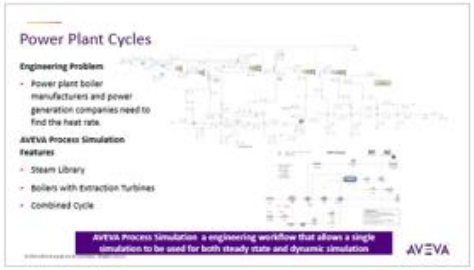
Hydrogen liquefaction



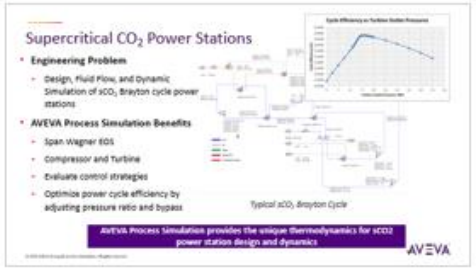
Pressure swing adsorption



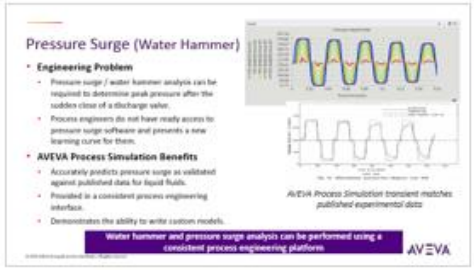
Power plant cycles



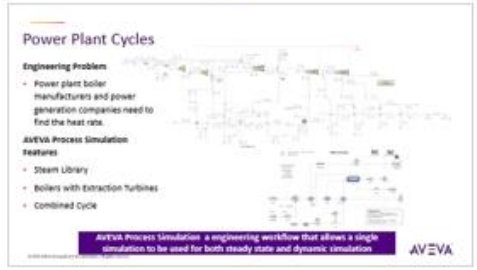
Supercritical CO_2 power



Pressure surge



HX tube rupture



AVEVA™

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AVEVA™ Process Simulation Proposed Release Plan

October Release of 5.0 brings many feature Chemical Process Simulation

AVEVA™ Process Simulation 4.2 Beta Released (April 2020)

- SRK Huron-Vidal (SRKH) Thermo Method
- Ideal thermo Method
- NRTL Binary Data Override
- User Added Thermo Interface
- Predefined Heat Medium Fluid
- Model References (for Subflowsheets)
- Scenario RUN UNTIL (for Batch)
- Pressure Swing Adsorption Library
- Flare Alternative Pipe Tables
- Air Separation Plant Example
- More Process Stream Properties
- Process Library Updates
- LaaS Licensing
- Performance Improvements

AVEVA™ Process Simulation 4.3 Released (July 2020)

- Lee Kesler Enthalpies
- Pure Component Data Override
- Henry Component Data Override
- Binary Phase Diagrams
- Ternary Phase Diagrams
- Electrolyte NRTL Method (eNRTL)
- Full Manual Solve for large models
- Graphical Subflowsheets
- Gibbs Minimization Reactor
- More Process Stream Properties
- Reference Streams
- Absolute Equipment Elevations
- Stream Flow Resistance
- Process Library Updates
- Performance Improvements

AVEVA™ Process Simulation 5.0 Active (October 2020)

- Transport Property Mixing Rules
- Transport Property Data Override
- Non-Equilibrium Solids
- Salt Precipitation (eNRTL)
- Heat Curves for HTRI Exchanger Suite
- Flag / Flowsheet Isolator Model
- Compressor Multiple Speed Curves
- Column Murphree Efficiency
- Liquid Ring Vacuum Pump Model
- Flare Dynamics
- Membrane Library
- Economics Library for Operation Costs
- Process Library Updates
- Performance Improvements

AVEVA™ Process Simulation 5.1 Proposed (Jan 2021)

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AVEVA™

Features

Version 5.0 Oct 2020

User Interface

- Modern ribbon design
- Undo / redo changes
- Open multiple simulations
- Changes continuously saved
- Error and warning badges
- Subflowsheets
- Units of Measure
- User Roles

Simulation Modes

- Three simulation modes
- (1) Process simulation mode
- (2) Fluid flow / rating mode
- (3) Dynamics mode
- Return to any mode
- Design Optimization

Solver Management

- Continuously solved
- Free variable specification
- Specification analyzer feedback
- Fast equation-oriented solution
- Robust block decomposition
- Implicit Euler dynamic integrator
- Implicit Trapezoidal Integrator
- Return to any saved snapshot

Thermodynamic Methods

- Ideal
- Industrial Steam Tables IF97
- Soave Redlich Kwong (SRK)
- Peng Robinson (PR)
- SRKH (Huron-Vidal)
- SRKM / PRM
- Wilson
- NRTL
- UNIFAC (Dortmund)
- UNIQUAC
- LACT with EOS for vapor
- Hayden-O'Connell for fugacity
- Lee-Kesler Enthalpies
- Grayson-Streed/Improved GS
- Isomeric Hydrogen
- Span-Wagner supercritical CO2
- Bosen and Engels Electrolytes
- Electrolyte NRTL (eNRTL)

Phase Equilibrium

- VLE
- VLWE (beta)
- VLLE
- Non-Equilibrium Solids

Thermo Data

- Petro components
- SimSci Databanks
- DIPPR Lite Databank
- DECHEMA Data Import
- Thermodynamics Data Manager (TDM)
- NRTL Binary Override
- Henry Data Override
- Pure Component Override
- Transport property mixing rules

Model Libraries

- Process
- Cooling Water
- Steam
- Flare
- Transient Flow
- Adsorption
- Rate-Based Column
- Pressure Swing Adsorption
- Membrane

Controls Library

- Transmitter
- PID Control
- On/Off Control
- Select
- Switch
- Anti-Surge
- Alarm (preview)
- Wave (preview)

Model Writing

- Parameters
- Variables
- Conditions
- Equations
- Ports
- Submodels
- Connections
- Icons
- Type change propagation

New in 4.2 - April 2020

New in 4.3 - July 2020

New in 5.0 - October 2020

Process Library

- Source / Sink
- Mix / Split / Header
- Drum (2 phase)
- Separator (3 phase)
- Column / Hydraulics
- Valve
- Relief Valve
- Orifice
- Pipe
- PipeRig (two phase)
- Pump
- Liquid Ring Vacuum Pump (Preview)
- Compressor (multi-speed)
- Reciprocating Compressor
- Expander
- Motor
- Extractor
- Heat Exchanger
- Air Cooler
- Water/Utility Cooler
- Thermosyphon Reboiler
- Spiral Wound HX
- Plate Fin HX
- Recycle
- Fluid Change
- Burner
- Equilibrium Reactor
- Conversion Reactor
- Stirred Tank Reactor
- Plug Flow Reactor
- Gibbs Minimization Reactor
- Flag / Flowsheet Isolator

Tools and Utilities

- Snapshots
- Trends
- Profile Plots
- Heat Curve
- Binary Phase Diagrams
- Ternary Phase Diagrams
- Scenario
- Curve (with Image Import)
- Stream / Equipment Tables
- OSI PI External Data
- Global Variables

Excel Reports Add-in

- Excel Ribbon Control
- Compare Snapshots
- Compare Simulations
- Get Value Function
- Set Value Function
- Get Dynamics Value Function
- Get Model List Function
- More Functions

Programming Interfaces

- External Equation Interface
- User Added Thermo Interface

Deployment

- 64 Bit Computation
- Single user Desktop installer
- Token, ALS, CALM, LaaS Licensing

Unified Engineering

- To AVEVA™ Engineering
- From AVEVA™ Engineering

Notes: (beta/preview) – Feature for feedback. (wip) – Work in progress for future release

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01 Vision of AVEVA Process Simulation

02 New Features

03 Roadmap

04 Feedback and Comments

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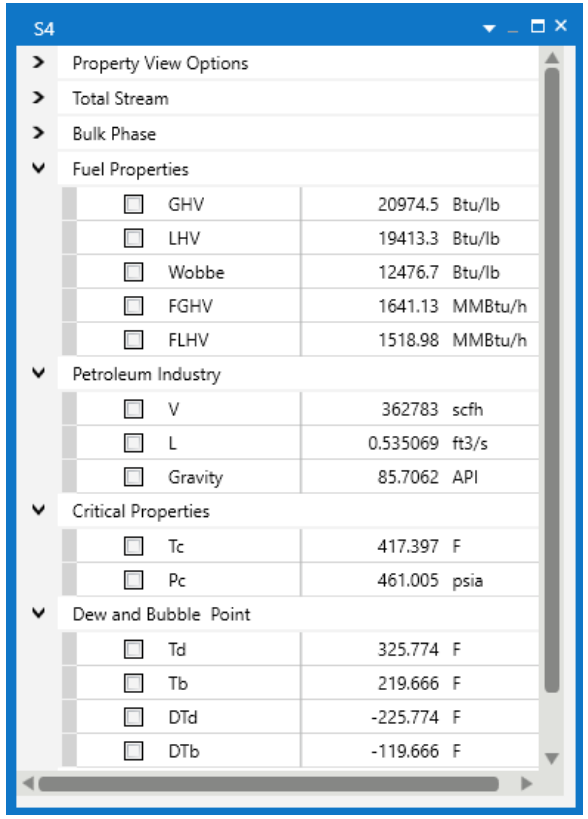
AVEVA Process Simulation

New Features

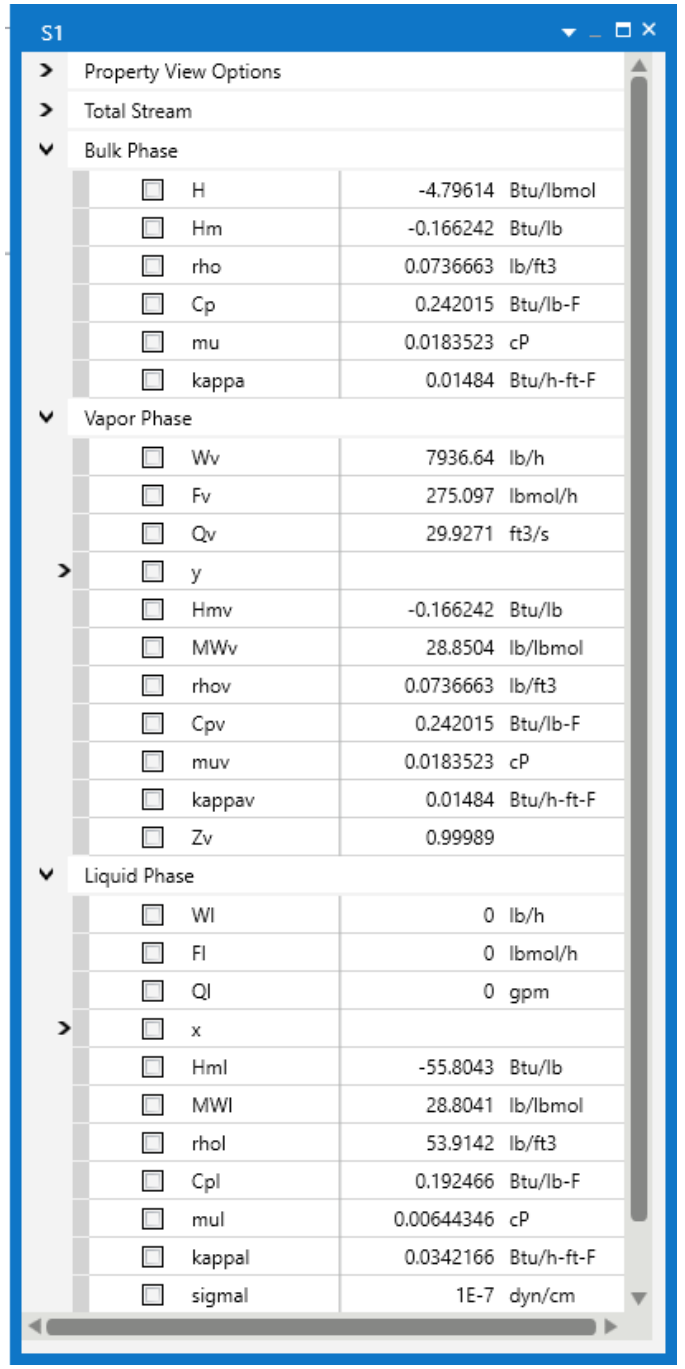
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AVEVA™ Process Simulation 4.3 New Features

More Process Stream Data



- **Fuel Heating values**
  - GHV, LHV, and Wobbe Index
  - Combustion heat flow for fuel balances FGHV and FLHV (4.3)
- **Petroleum**
  - Standard liquid API Gravity Standard Liquid flow L
- **Critical Properties**
  - Traditional Kay's Rule Tc and Pc
- **Bubble and Dew Points**
  - Tb and Td
  - Degrees of superheated and subcooling DTb and DTd



- **Phase thermophysical data**
  - Molecular weight MW_v, MW_l, MW_{l1}, MW_{l2}
  - Specific heat $Cp_{v.}$, Cp_l, Cp_{l1}, and Cp_{l2}
  - Viscosity mu_v, mu_l, mu_{l1}, mu_{l2}
  - Thermal conductivity $kappa_v$, $kappa_l$, $kappa_{l1}$, $kappa_{l2}$
  - Vapor phase Ideal gas compressibility factor Zv
- **Specific heat ratios for relief valves sizing**
  - Ideal specific heat ratio CpCv (4.3)
  - Isentropic expansion coefficient k (4.3)

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AVEVA™ Process Simulation 4.2–5.0

Thermo Data Override

Objectives/Background

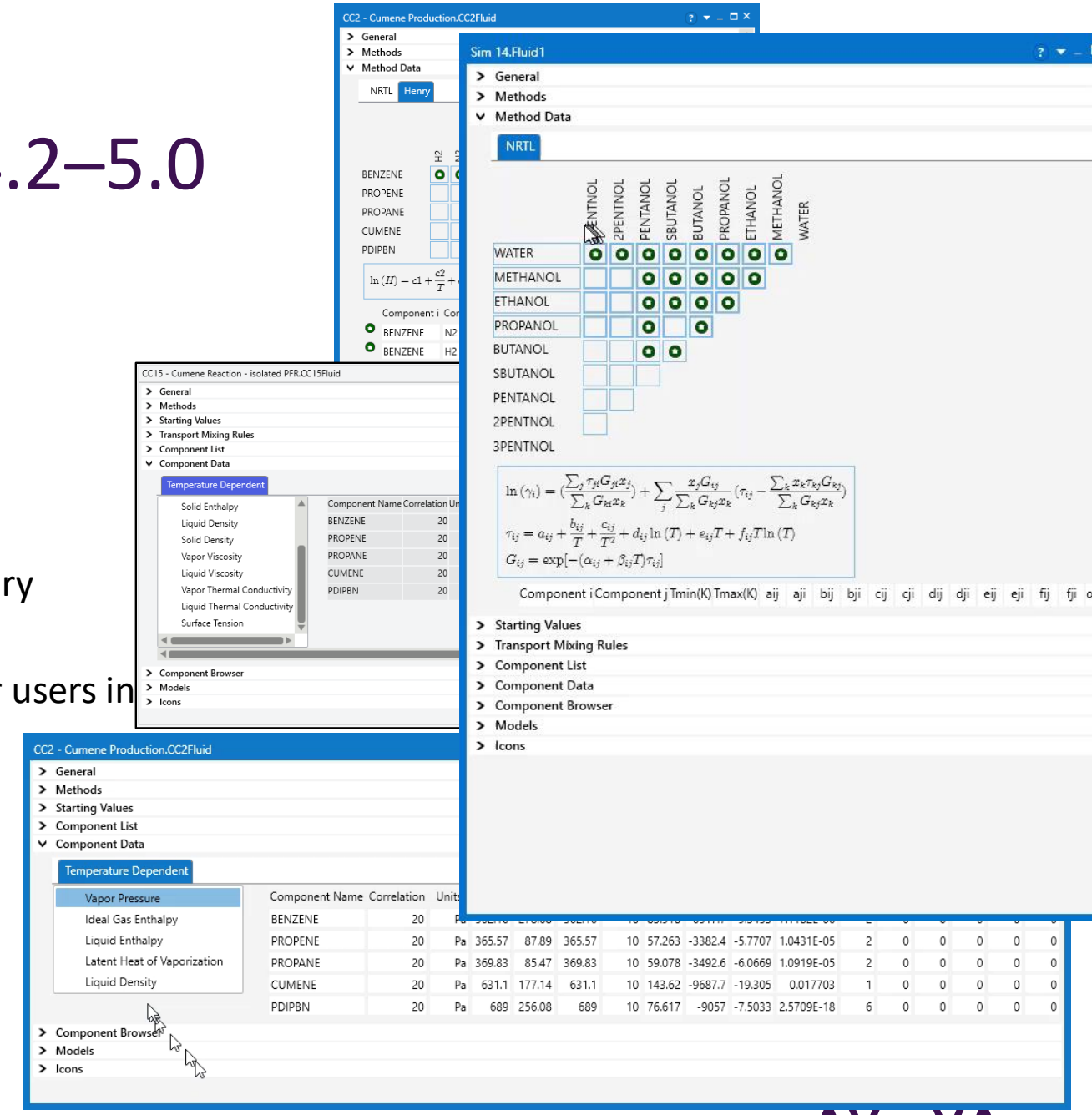
- Quickly see effect of thermo parameter changes on the simulation.
- Changing data in TDM is not simulation specific.

Solutions

- Fluid Editor contains thermo data to override TDM Library
- Updating lb1 and lb2 files no longer required.
- Thermodynamics specialists may share Fluid with other users in their company.

Delivery Plan

- NRTL binary data override: Version 4.2 Beta (April 2020)
- Pure and Henry's parameters: Version 4.3 (Jul 2020)
- Transport properties: Version 5.0 (Oct 2020)
- More methods after Version 5.1+



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AVEVA™ Process Simulation 5.0 New Features

Non-Equilibrium Solids

Objectives/Background

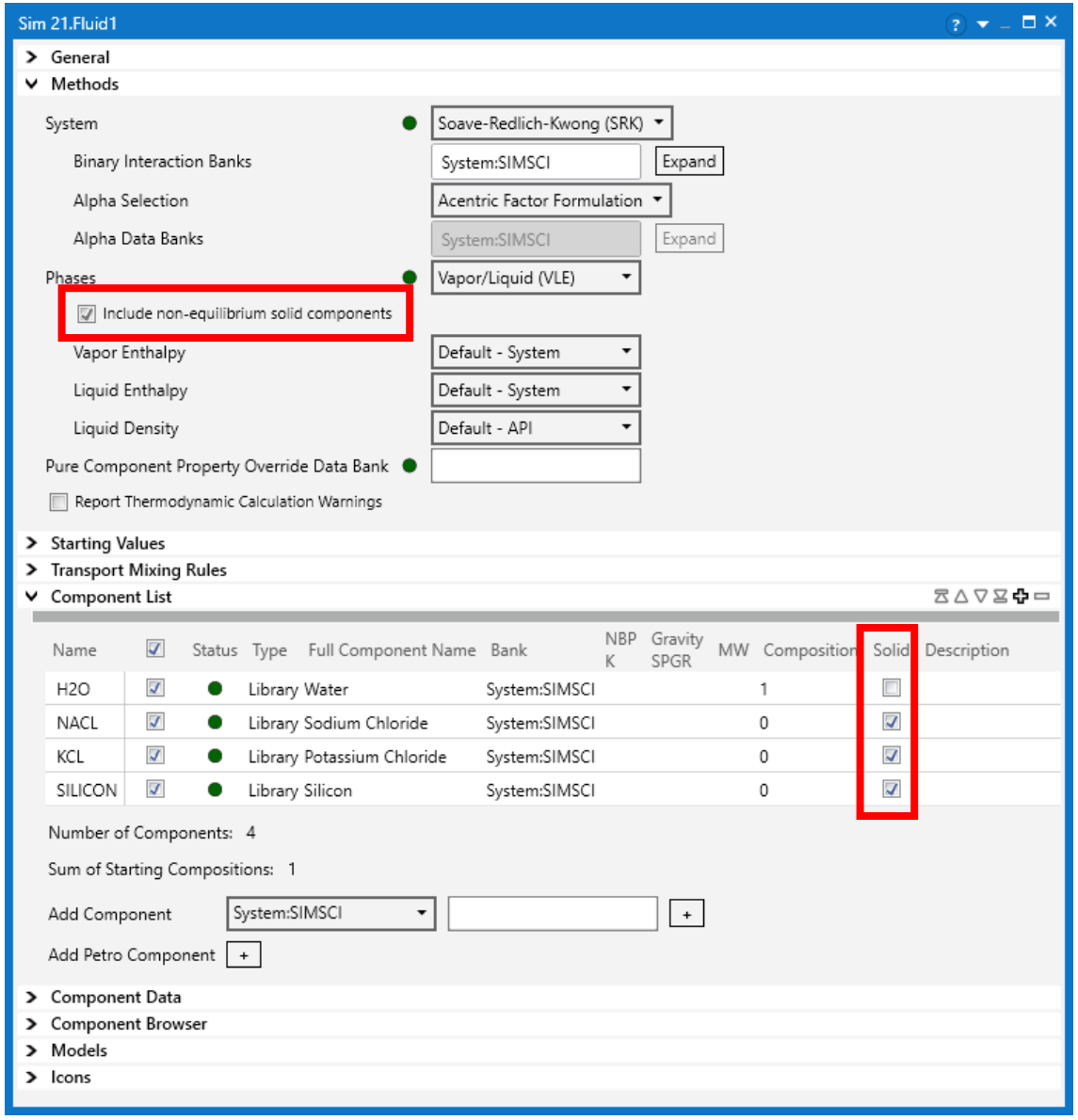
- Many processes include solid components such as ash, precipitates, and other components that do not interact with vapor-liquid phase equilibrium.

Solutions

- Solids now appear in Component Browser
- Select to include solids in Phases
- Observe it is a solid in Component List
- Flash assumes solid always remain in the liquid phase

Delivery Plan

- Version 5.0 (October 2020)



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AVEVA™ Process Simulation 4.3 New Features

Ternary Phase Diagrams

Objectives/Background

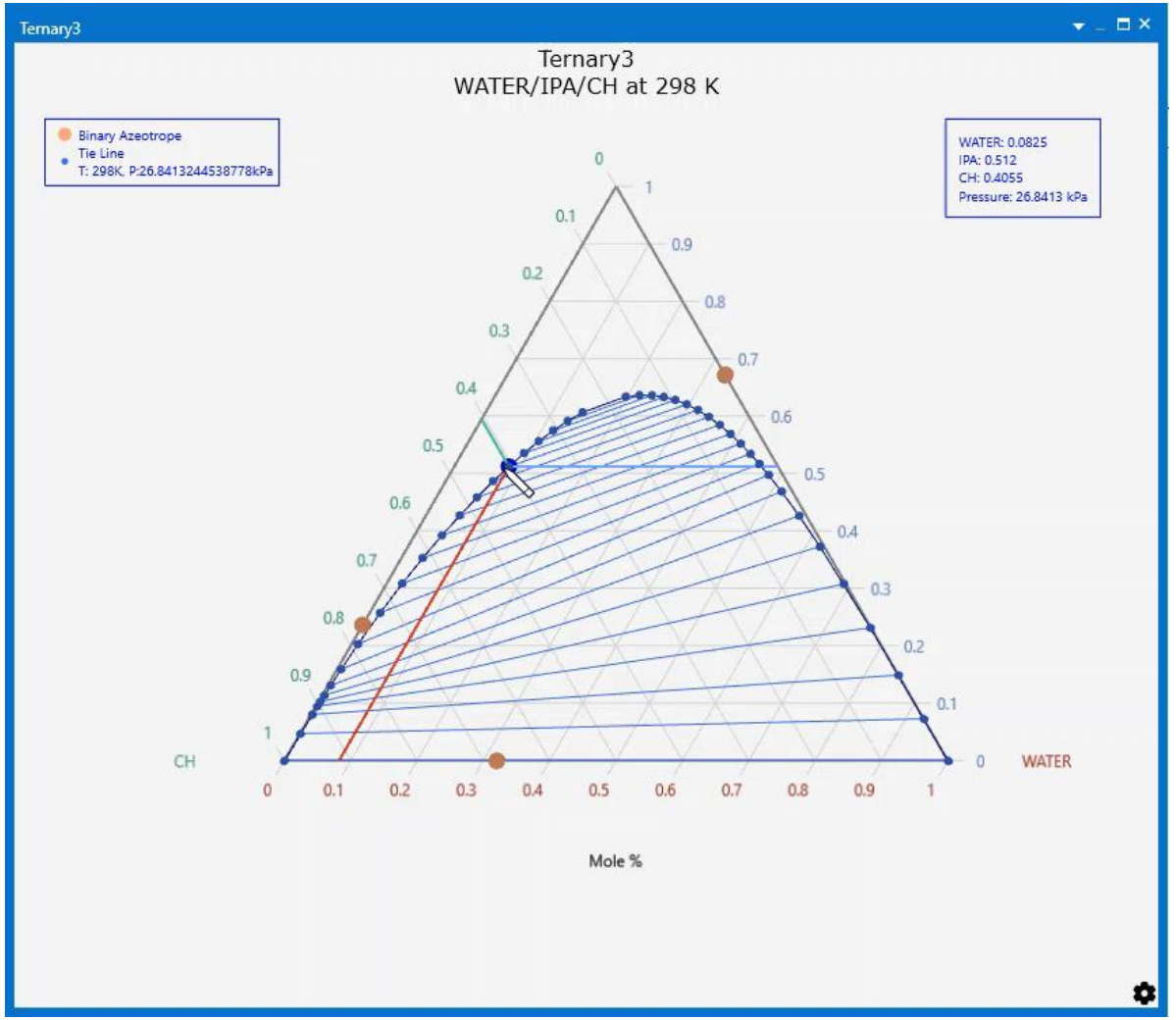
- Provide the classic three component phase diagrams in equilateral triangle form

Solutions

- Use scroll wheel to zoom in and pan left and right so that you can see more detail

Delivery Plan

- Azeotropes (version 4.3)
- Liquid-Liquid Tie-Lines (version 4.3)
- Residue Curves (future version)



Version 4.3 Ternary Phase Diagram Video

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AVEVA™ Process Simulation 5.0 New Features

Heat Curve Export for Exchanger Design

Objectives/Background

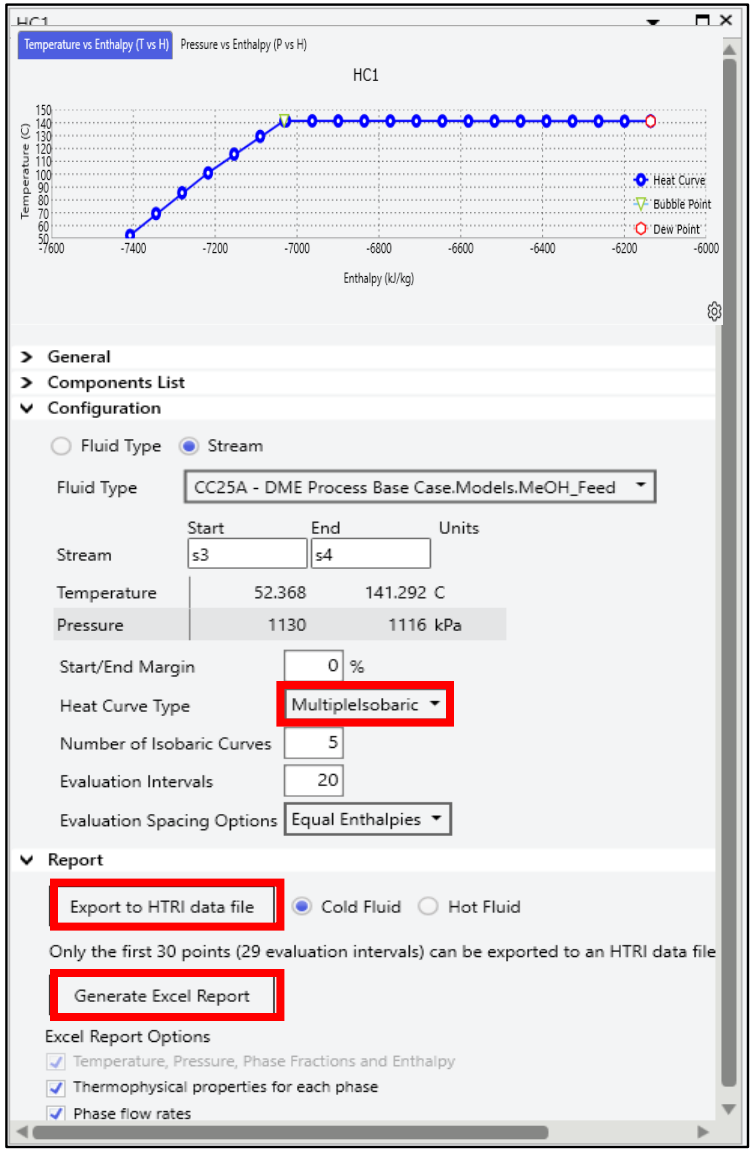
- Process simulators are needed to generate heating curves with property data to design heat exchangers

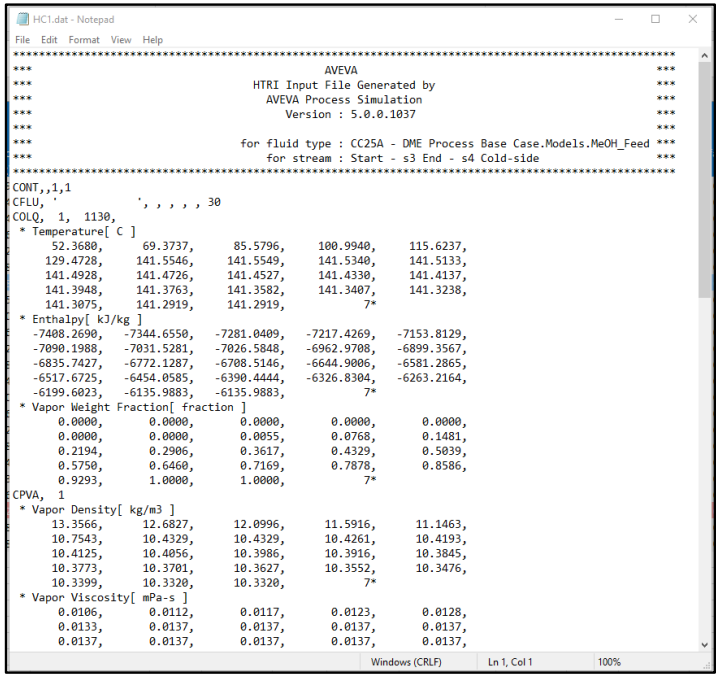
Solutions

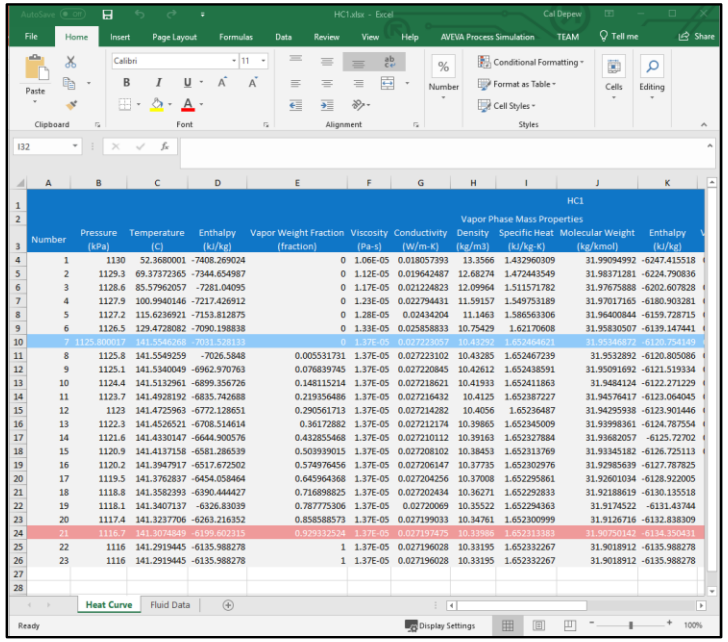
- Select start and end stream which may cover multiple exchangers
- Select multi-Isobaric to data can be interpolated at different exchanger pressure drops
- Export to Microsoft Excel
- Export to HTRI® Xchanger Suite dat file

Delivery Plan

- Version 5.0 (October 2020)
- VLLE Fluids (Future)
- Steam Fluids (Future)







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AVEVA™ Process Simulation 4.3 New Features

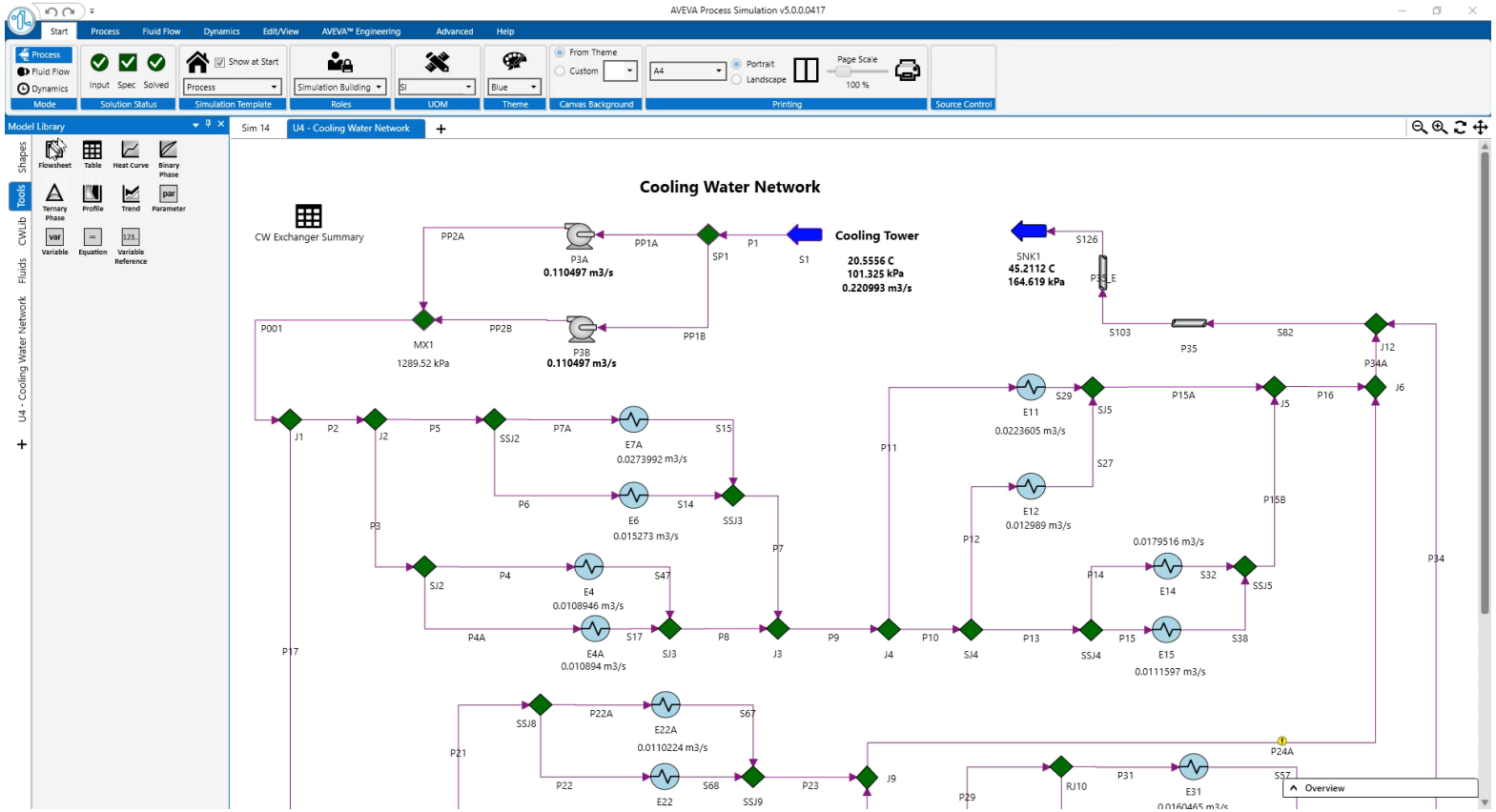
Graphical Subflowsheets and Model References

Problem

- Large simulations on a single flowsheet are hard to navigate and locate objects

Solution

- Drag a subflowsheet from Tools onto the Main flowsheet
- Select subflowsheet using vertical tabs
- Use Model References so that the same model appears in both flowsheets.
- Navigate from Model Reference to another flowsheet by right clicking on Navigate
- Streams, Pipes, Recycles are good choices for reference models.
- Recycle models can allow independent solution by setting them to “Source” mode.
- Move models from one flowsheet to another



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AVEVA™ Process Simulation 5.0 New Features

Flowsheet Flag Model



Objectives/Background

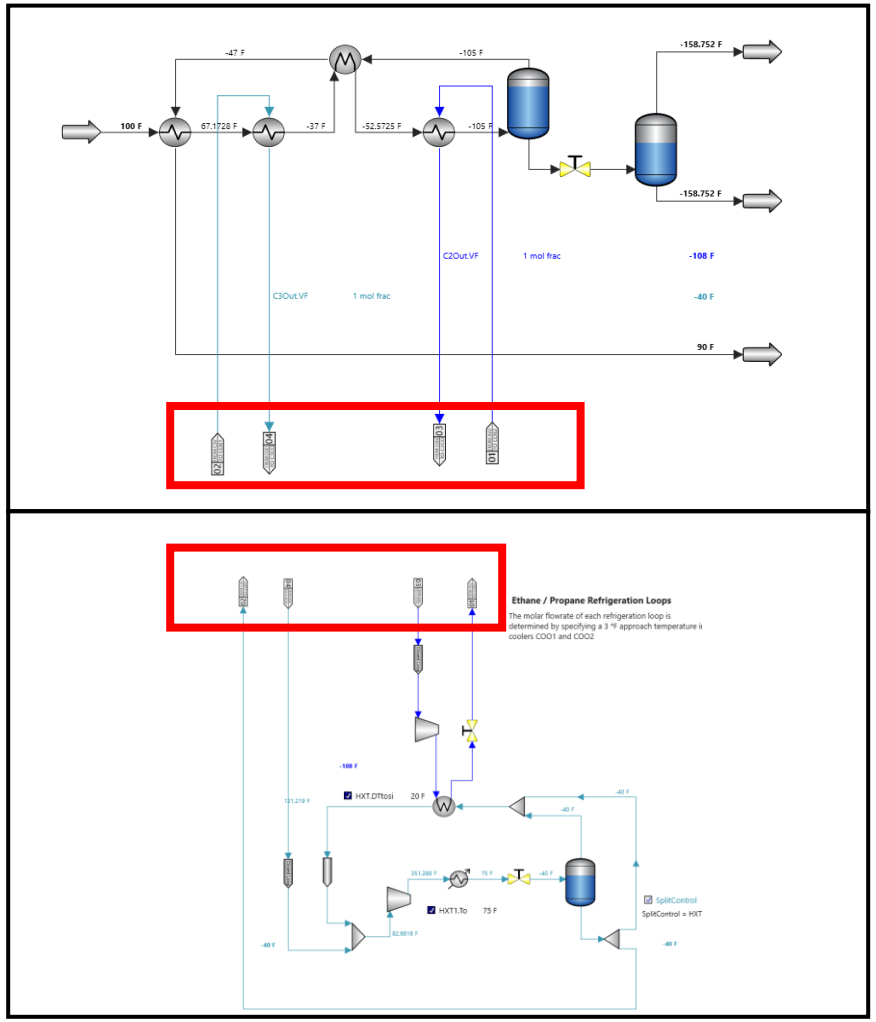
- PFD and P&ID use a symbol to show how streams flow from Sheet to another.
- Large simulations with lots of flowsheets may take a long time to solve especially if one misbehaving objects influences the entire simulation.

Solutions

- Flag model to flag number and “from” and “to” labels.
- Use as a Flowsheet Reference model. Right Click “Navigate” to go to other flowsheets.
- Global Operation can be set to Normal, Tear, or Isolate like a Recycle to solve flowsheets separately.
- See Undocumented Example AA1

Delivery Plan

- Process Library
- Version 5.0 (October 2020)



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AVEVA™ Process Simulation 5.0 New Features

Curve Sets

Objectives/Background

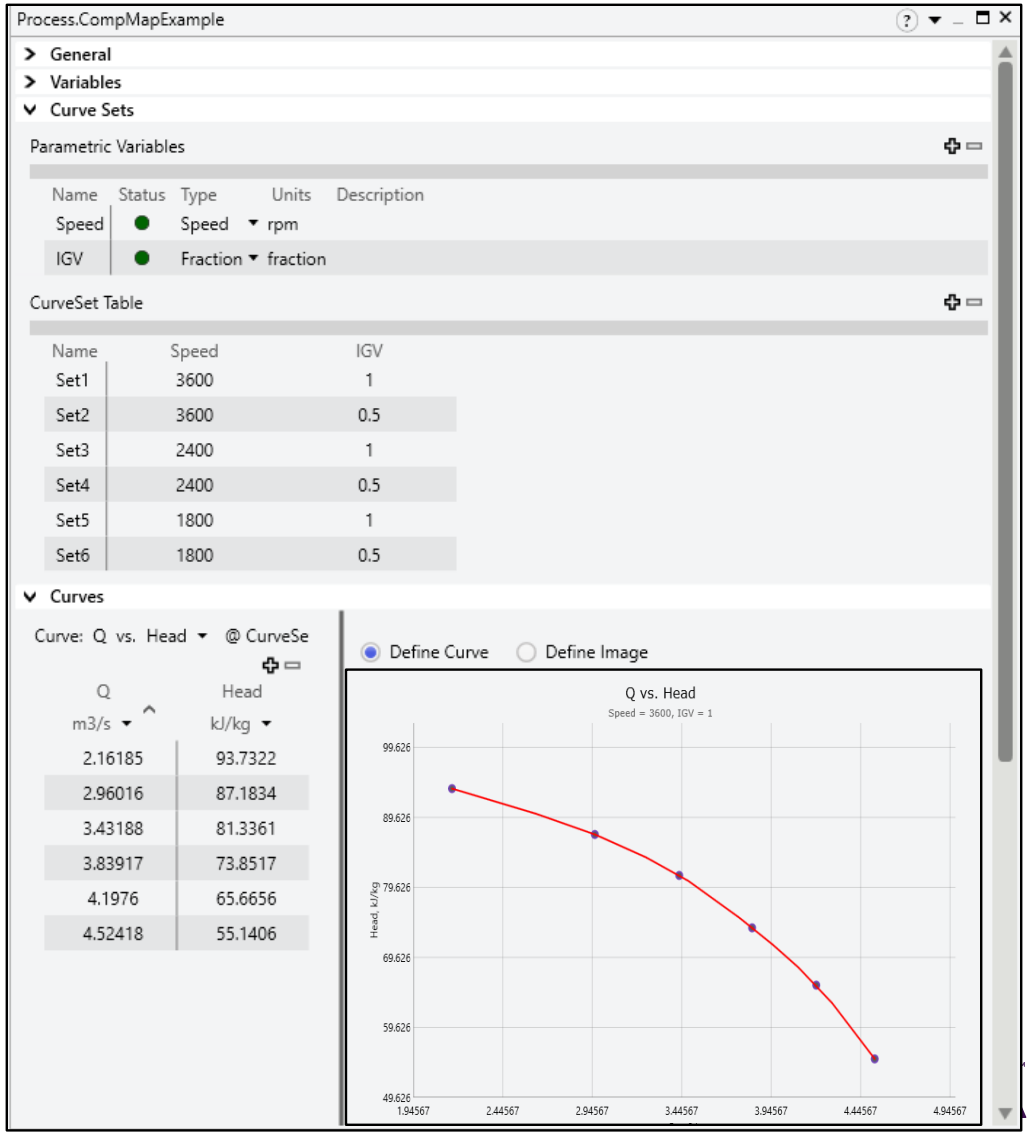
- Curves sometimes depend on other parameters which impact the shape of curve, such as a compressor Head vs flow curve is impacted by the speed.

Solutions

- Provide Curve Sets so curves can be entered at different parameters. The curve solver will interpolate between the curves based on the parametric values.
- Figure (right) shows Compressor at two parametric values of Speed and IGV

Delivery Plan

- Version 5.0 (October 2020)
- Used by Process Compressor Model



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AVEVA™ Process Simulation 5.0 New Features

Compressor Multiple Speed

Objectives/Background

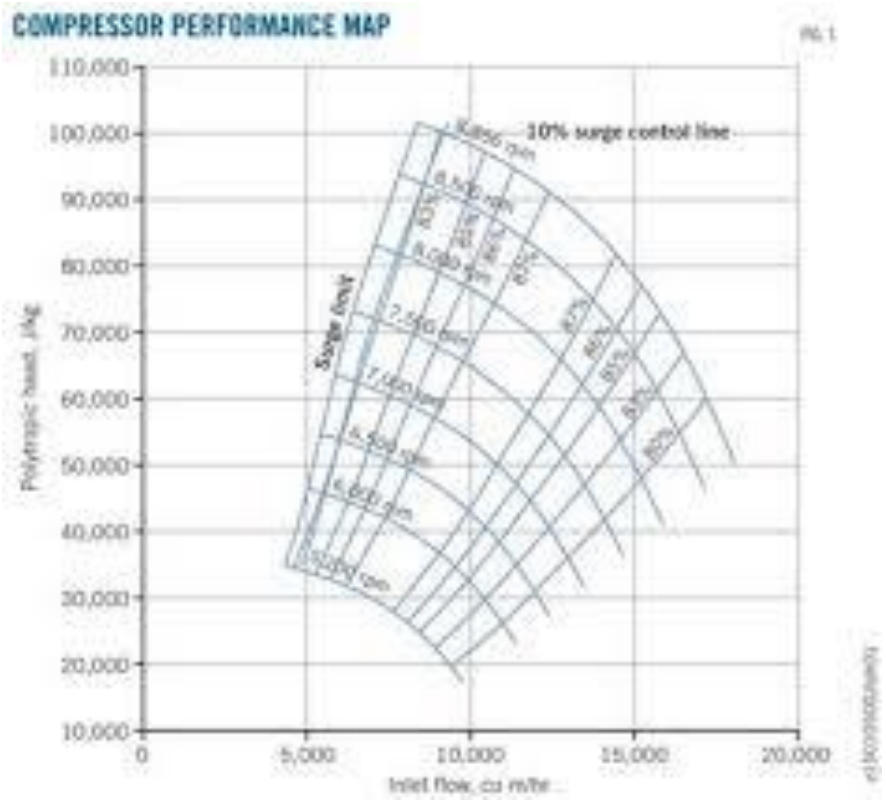
- Compressors have

Solutions

- Drag example curve CompMapExample from Process to simulation library.
- Modify Curve and drop on flowsheet compressor model.
- See Documented Example GG1
- See Curve Set slide for more information.

Delivery Plan

- Process Library
- Version 5.0 (October 2020)



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AVEVA™ Process Simulation 5.0 New Features

Submodels that Extend Top Level Models

Objectives/Background

- Calculating or minimizing operating costs requires a way to extend simulation models with facility specific equations that totalize their cost.

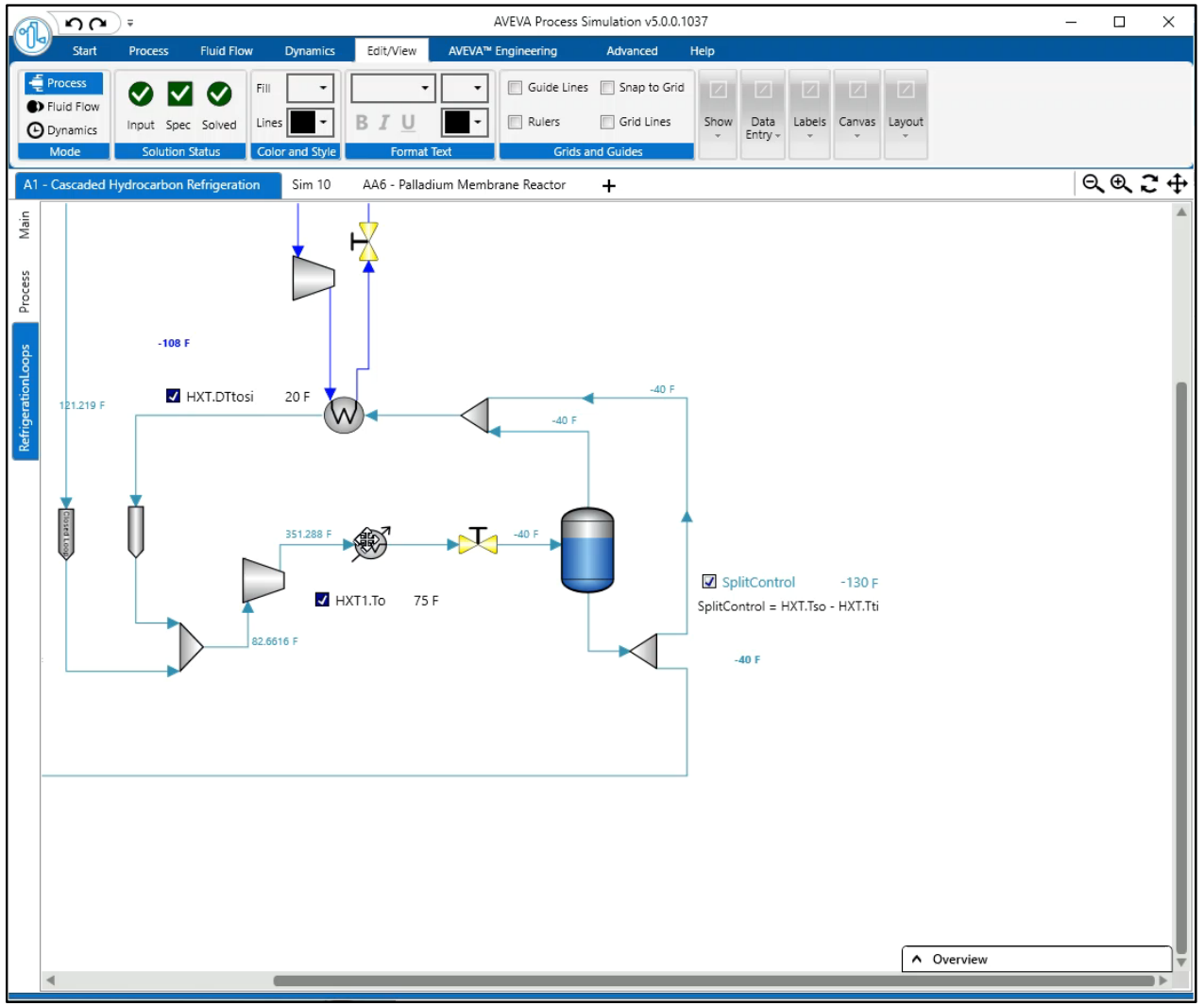
Solutions

- Select model to Extend
- Right select Submodels
- Select Add

Delivery Plan

- Version 5.0 (October 2020)

Play Video



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AVEVA™ Process Simulation 5.0 New Features

Economics Model Library

Objectives/Background

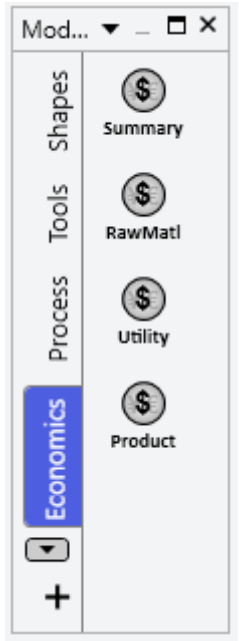
- Engineers want to create a design which reduces operating costs include feeds cost and utility costs such as water, steam, fuel, and electric power. But every facility may have unique facilities.

Solutions

- The Economics library provides templates for Extension Submodels that can extend the existing flowsheet models to calculate their operating cost.
- Copy models from Economics to Simulation to customize them for your plants utilities, feeds, and products.

Delivery Plan

- Economics Library in Example Libraries Folder
- Version 5.0 (October 2020)



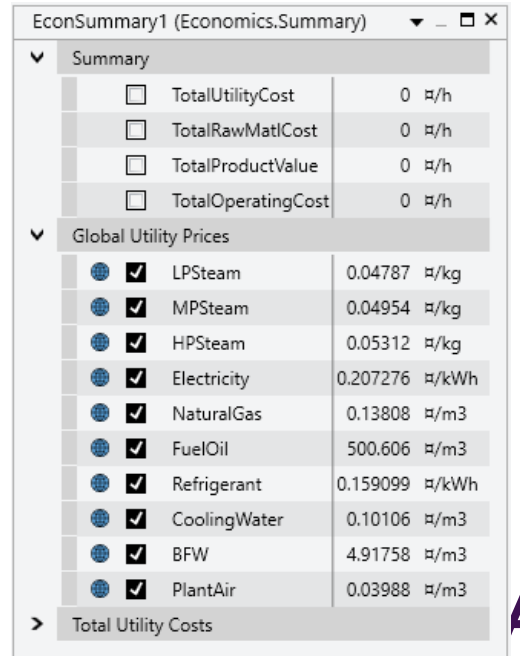
Example Models to copy to your simulation folder

Summary: Example Top level model to show summary of all costs and set utility prices.

Example Raw material cost extension model.

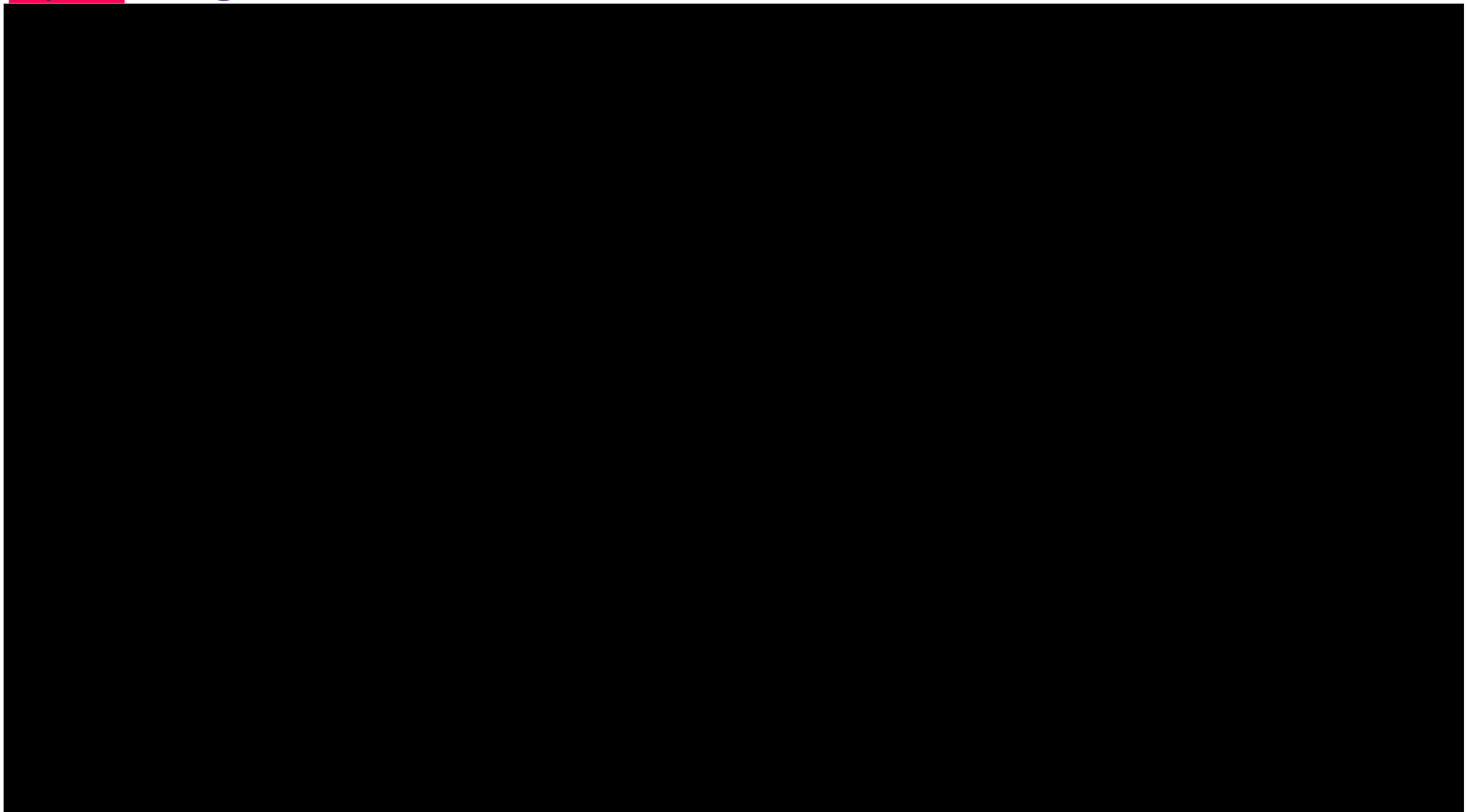
Example Utility cost extension model.

Example Product cost extension model.



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Operating Cost Minimization Video



AVEVA™ Process Simulation 4.3 New Features

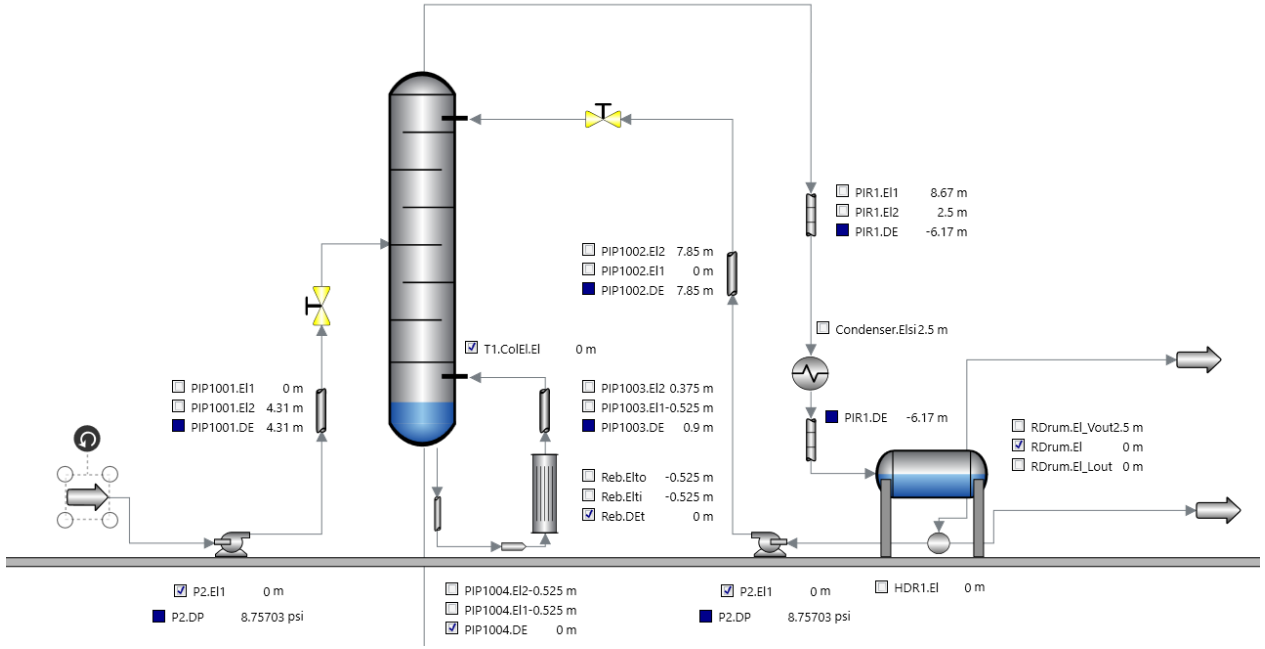
Absolute Equipment Port Elevations for Hydraulic Calculations

Problem Statement

- Specifying elevations in pipes is error prone and requires offline hand calculations

Solution

- Have option for equipment port elevations from tangent line to grade
- Auto calculate column port elevations (from HoldupFactor)
- Provided in Process, SteamLib, and CW libraries



Example to find hieight of overhead receiver to provide required NPSH to relfux pump using Port Elevations

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Hydraulics Video using Equipment and Port Elevations

Slido
Q5



AVEVA™ Process Simulation 5.0 New Features

Hydraulic Circuit Design / Flare Design Improvements

Miscellaneous Hydraulic Circuit Design Improvements in Process and Steam Library

- **Process / Steam / CW Pipe** shows friction pressure drop for Hydraulic Circuit Design
- **Process / Steam Pump** has impeller size affinity law for Hydraulic Circuit Design
- **Process / Steam /CW Pump** has Net Positive Suction Head (NPSH) Safety factor for warning for Hydraulic Circuit Design
- **Process / Steam Valve** has the characteristic (such as Equal Percent, Linear, Quick Opening) at the top level in the mini inspector for easier use.

Miscellaneous Flare

- **Flare PRV and PSV** model can now use ideal Cp/Cv ratio per API 520 in additn to datasheet information or isentropic expansion coefficient
- **Flare Deal Drum** model can now have fluids other than water.

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AVEVA™ Process Simulation 4.3 New Features

Gibbs Minimization Reactor

Problem

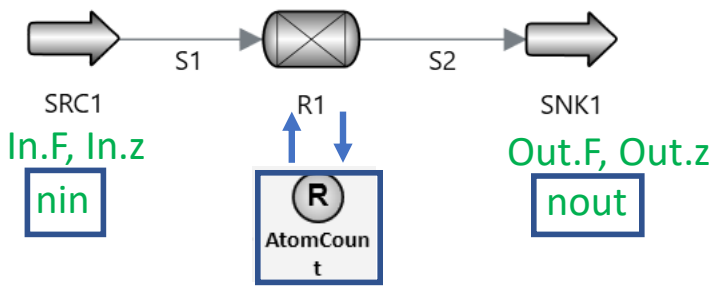
- Sometimes we need an equilibrium reactor, but we do not have the reactions or have time to develop them.

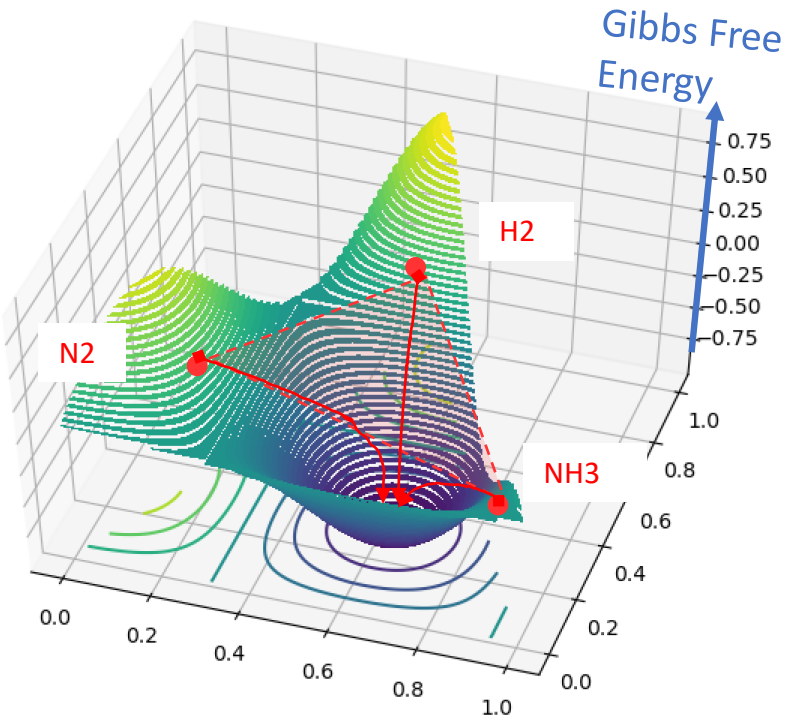
Solution

- Provide a Gibbs Energy Minimization Reactor (GMR) in Process Library.
- Lagrange Multiplier approach eliminates need to use minimization solver.
- Use the replacemable model when needed to calcuate atom count.

Status/Delivery Plan

- GMR model 4.3





$$\text{P}: \min \frac{G(n_i, T, P)}{RT} = \sum_{i=1}^{NOC} n_i \left(\frac{G_i^0}{RT} + ln \frac{n_i}{\sum n_i} + ln \left(\frac{P\Phi_i}{P_0} \right) \right)$$

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AVEVA™ Process Simulation 4.3 New Features

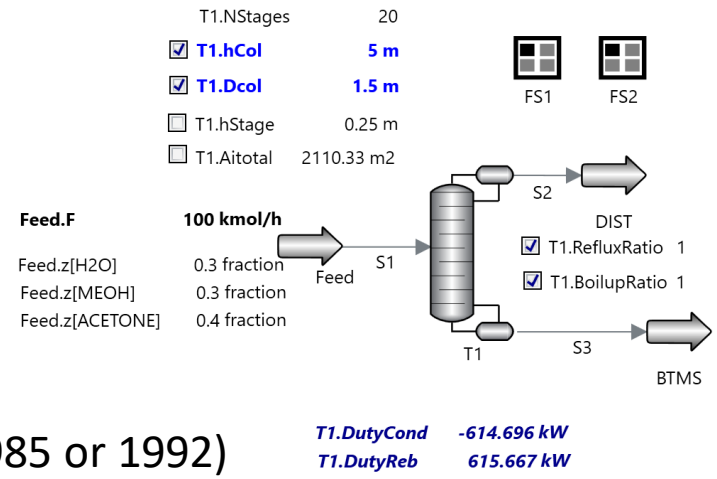
Rate Limited Distillation Library

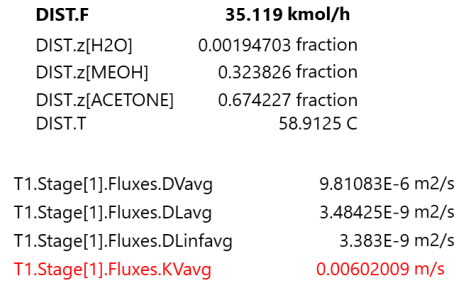
Solution

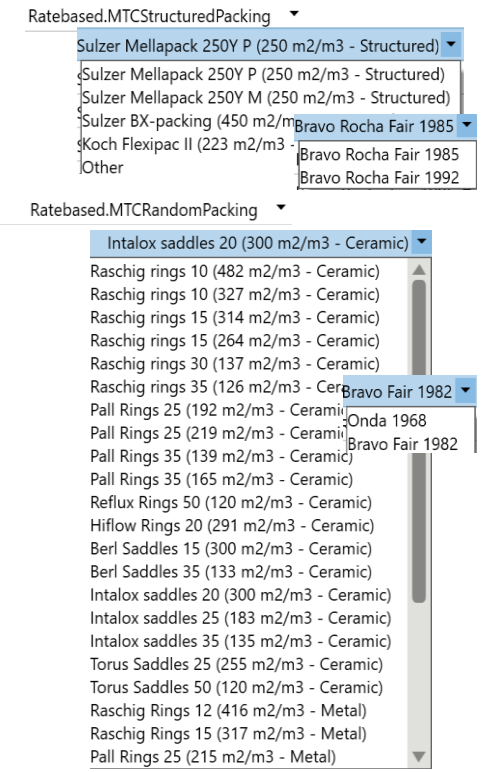
- Binary diffusion methods
  - Gas: Wilke-Lee or Fuller
  - Liquid: Wilke-Chang
- Mass transfer coefficient methods
  - Structured: Bravo-Rocha-Fair (1985 or 1992)
  - Random: Onda (1968) or Bravo-Fair (1982)
  - Sieve trays: Chan-Fair (1984)
  - Bubble caps: Grester (1958)
  - Valve: Scheffe-Weiland (1987)

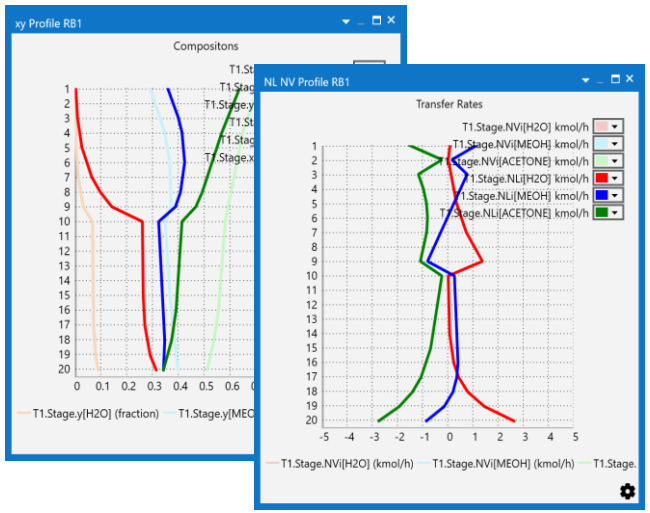
Status/Delivery Plan

- Released in a separate library in 4.3
- Reactions in a future version
- Dynamics in a future version









Slido Q7

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AVEVA™ Process Simulation 5.0 New Features

Membrane Model Library

Objectives/Background

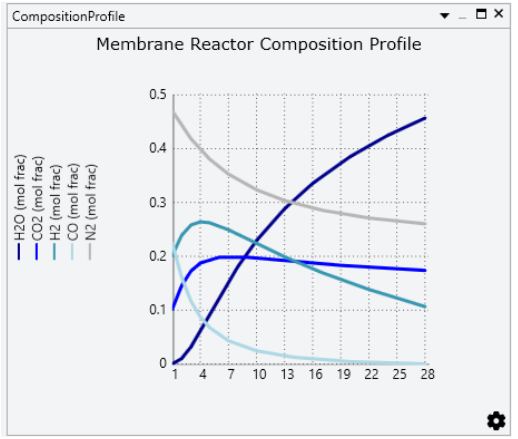
- Membrane reactors are becoming more prevalent especially as part of “process intensification”

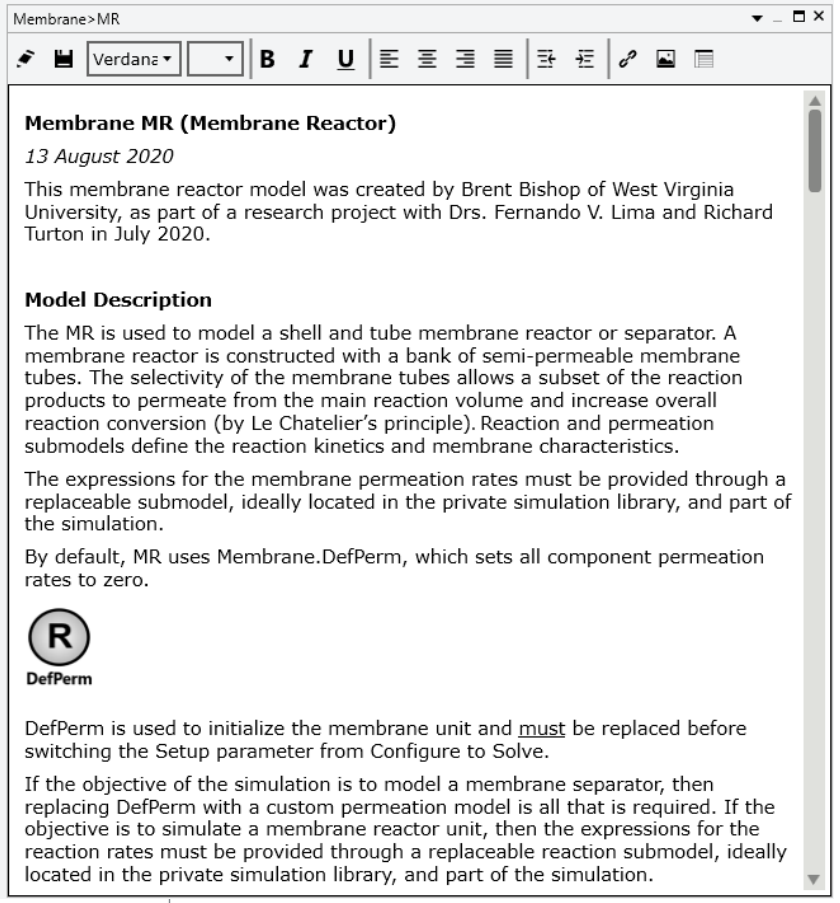
Solutions

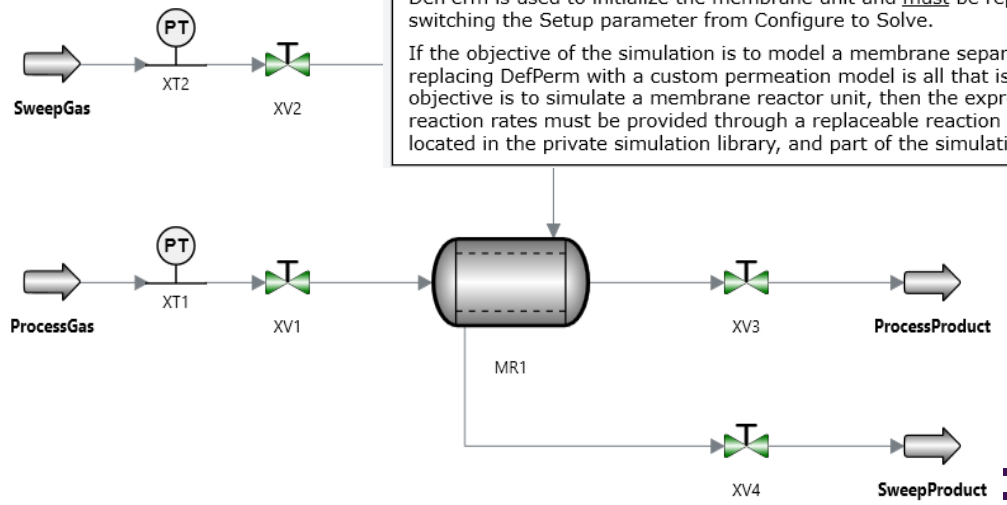
- Created by West Virginia University for AVEVA.
- Specialized Membrane Library with MR model
- Replaceable submodel reaction types.
- Example AA5 is a Polymer Membrane Model
- Example AA6 is a Palladium Membrane Model

Delivery Plan

- Membrane Library in Example Libraries Folder
- Version 5.0 (October 2020)







Bishop, Brent & Lima, Fernando. (2020). *Modeling, Simulation, and Operability Analysis of a Non-isothermal, Countercurrent, Polymer Membrane Reactor*. Processes. 8. 78.

https://www.mdpi.com/611918

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AVEVA™ Process Simulation 4.2 Beta New Features

Adsorption Library

Problem

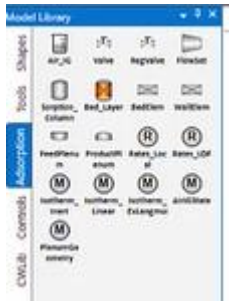
- Adsorption is a cyclic process and require Dynamic Simulation to model. Receiving new within Process Intensification.

Solution

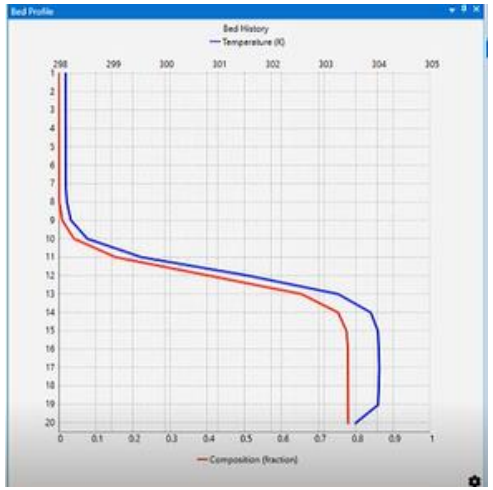
- Adsorption Library in SimCentral
- Any Isotherm and kinetic relationships can be customized in a submodel for any system just like reactors
- Developed in conjunction with industry expert Dr. Alberto LaCava.
- Validated against experimental data (Farooq et al, 1989)

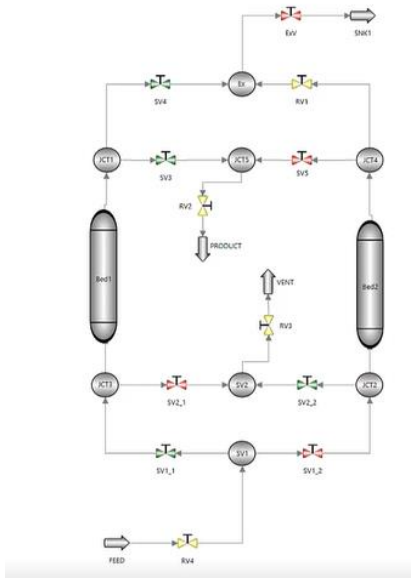
Delivery Plan

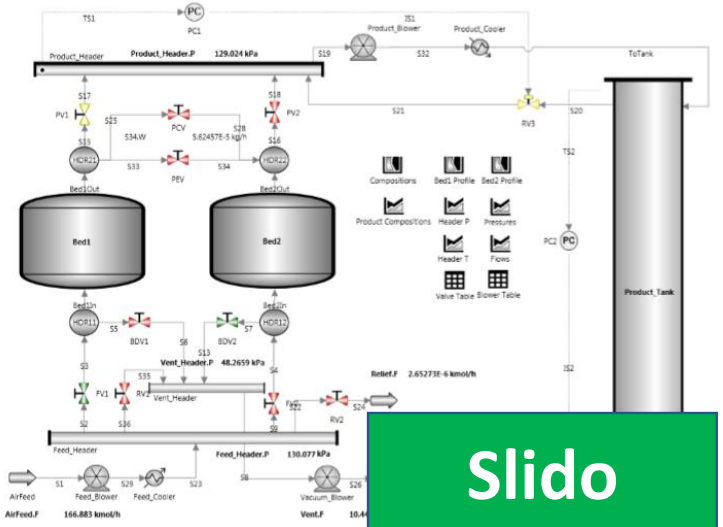
- Shipped with in the Example Library Folder



Dynamic simulation of moving front.







Slido Q8

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AVEVA™ Process Simulation 5.0 New Features

Liquid Ring Vacuum Pump (Preview)

Objectives/Background

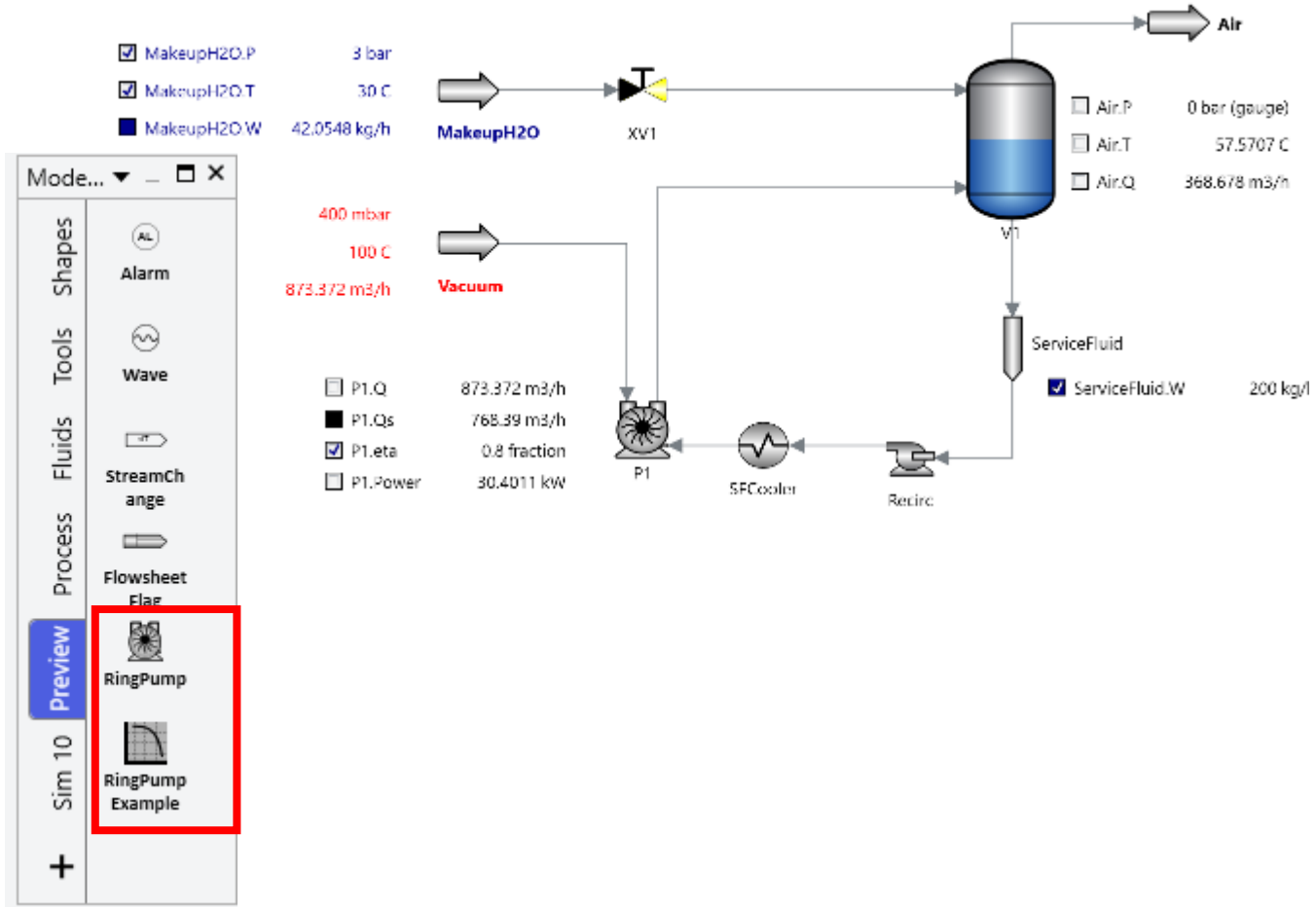
- Liquid Ring Vacuum Pumps (LRVP) are parts of chemical processes and have no suitable process model

Solutions

- The RingPump model provides a basic mass and energy balance for a liquid ring vacuum pump including the vapor and liquid seal .
- Example curve available.
- Only process mode

Delivery Plan

- Preview Library
- Version 5.0 (October 2020)



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AVEVA™ Process Simulation 4.3 New Features

Manual Solve without Specification Analysis

Objectives/Background

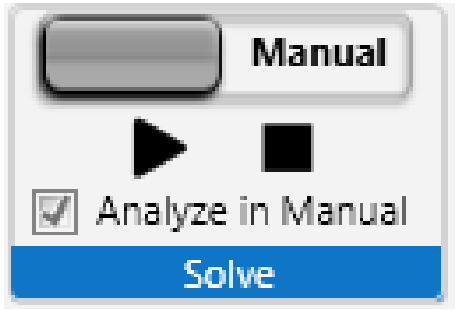
- Specification analysis would occur even in manual so that you know the degrees of freedom. But for extremely large models, this can be slow.

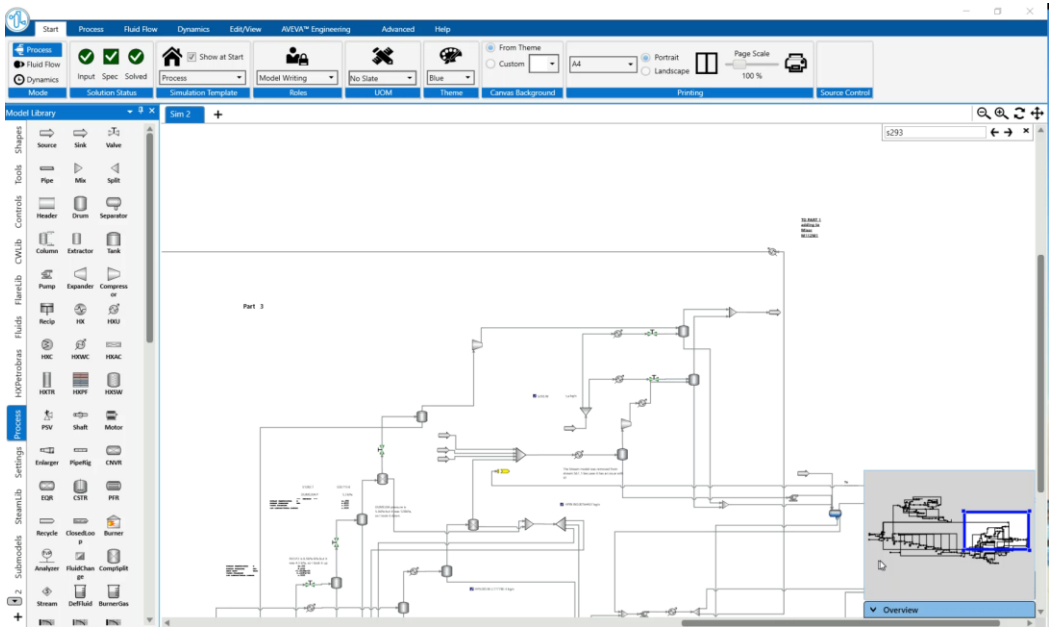
Solutions

- Provide a way to suppress specification analysis.

Warning

- You should solve often to be sure that the simulation is square and solvable.





VIDEO: Large Simulation to modify with in manual mode with Analyze turned off

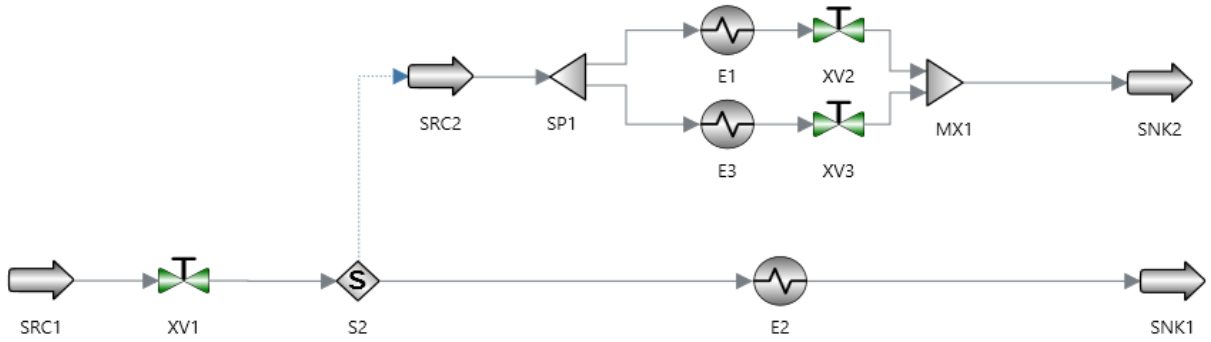
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AVEVA™ Process Simulation 4.3 New Features

Reference Streams Set Source Properties

Problem Statement

- Sometimes you want to perform a side calculations with a duplicated stream composition. But you want the stream to follow a reference stream so that you do not have to enter it again.



SRC2 is the same properties as stream S2 and will update when S2 updates

Solution

- Add a reference stream to the stream model that you can connect to a source.
- Show the stream connection model before you can connect to it.
- Make it a reference model if you want to locate it far away from the original model so that you do not have a dashed line on the canvas.

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AVEVA™ Process Simulation 4.3 New Features

Unified Engineering: Variable Mapping to AVEVA™ Engineering

Slido Q2

Problem

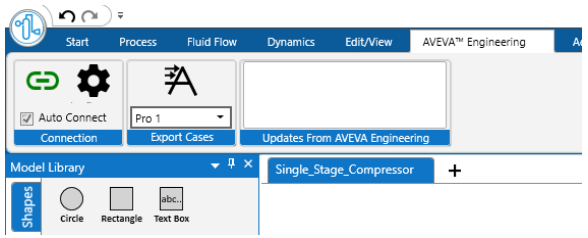
- Variable values must be transferred to and from AVEVA™ Engineering

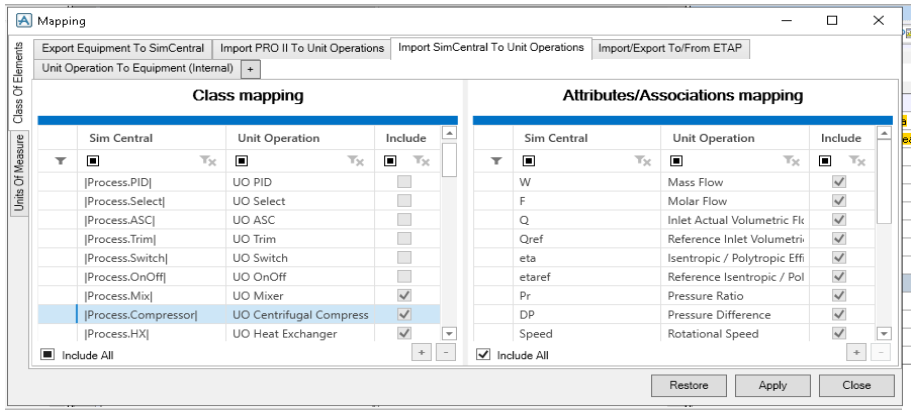
Solution - Two Way Transfer

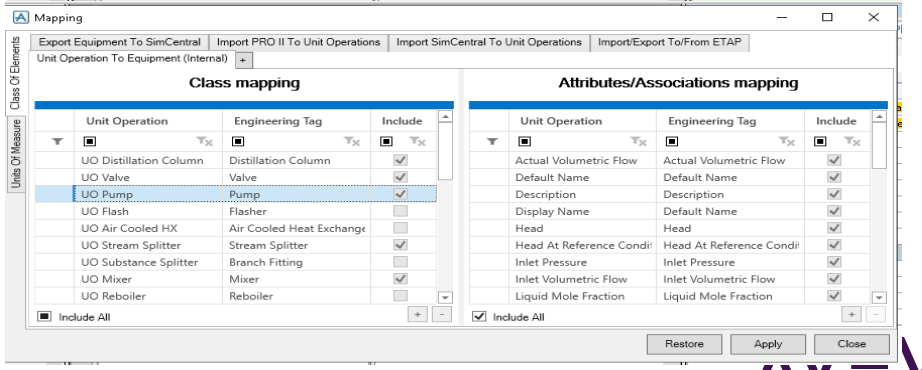
- **Send.** Process mode heat and material balance simulation to AVEVA Engineering to design equipment in Engineering
- **Receive.** AVEVA Engineering design information into Fluid Flow and Dynamics mode to rate and check the design

Models Mapped

- Valve, Pump, Pipe, Compressor, Drum, Column, Extractor, Relief valve, Heat Exchanger







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01 Vision of AVEVA Process Simulation

02 New Features

03 **Roadmap**

04 Feedback and Comments

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AVEVA™ Process Simulation Proposed Release Plan

October Release of 5.0 brings many feature Chemical Process Simulation

AVEVA™ Process Simulation 4.2 Beta Released (April 2020)

- SRK Huron-Vidal (SRKH) Thermo Method
- Ideal thermo Method
- NRTL Binary Data Override
- User Added Thermo Interface
- Predefined Heat Medium Fluid
- Model References (for Subflowsheets)
- Scenario RUN UNTIL (for Batch)
- Pressure Swing Adsorption Library
- Flare Alternative Pipe Tables
- Air Separation Plant Example
- More Process Stream Properties
- Process Library Updates
- LaaS Licensing
- Performance Improvements

AVEVA™ Process Simulation 4.3 Released (July 2020)

- Lee Kesler Enthalpies
- Pure Component Data Override
- Henry Component Data Override
- Binary Phase Diagrams
- Ternary Phase Diagrams
- Electrolyte NRTL Method (eNRTL)
- Full Manual Solve for large models
- Graphical Subflowsheets
- Gibbs Minimization Reactor
- More Process Stream Properties
- Reference Streams
- Absolute Equipment Elevations
- Stream Flow Resistance
- Process Library Updates
- Performance Improvements

AVEVA™ Process Simulation 5.0 Active (October 2020)

- Non-Equilibrium Solids
- Salt Precipitation (eNRTL)
- Transport Property Mixing Rules
- Transport Property Data Override
- Heat Curves for HTRI Exchanger Suite
- Flag / Flowsheet Isolator Model
- Compressor Multiple Speed Curves
- Column Murphree Efficiency
- Liquid Ring Vacuum Pump Model
- Flare Dynamics
- Membrane Library
- Economics Library for Operation Costs
- Thermo Access Interface for regression
- Process Library Updates
- Performance Improvements

AVEVA™ Process Simulation 5.1 Proposed (Jan 2021)

- Batch Distillation
- Scripting Interface
- Koch Glitsch Column Internals
- Sulzer Column Internals
- Gibbs Reactor Improvements
- Rate Based Distillation Improvements
- Thermo and Solver Diagnostics
- Performance Improvements

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AVEVA™

AVEVA Process Simulation Roadmap

2019	2020	Future
2019 Strategy	**2020 Strategy**	**2021+ Strategy**
• Cooling Water and Steam Utilities • Relief and Flare Systems • Chemical Process Simulation	• Process Utilities Improvements • Relief and Flare Improvements • Chemical Process Simulation Improvements	• Chemical Process Simulation Improvements • Downstream Process Simulation • Upstream Process Simulation
2019 Delivered (4.1)	**2020 in development (4.2 – 5.0)**	**Long range plans (5.1+)**

• Platform
  • Design Optimization
  • Global Variables and Parameters
  • Message Monitor
  • Trapezoidal Integrator
• Process
  • Reactive Distillation
  • Plate Fin and Spiral Would Heat Exchanger
  • Rigorous Pipe Dynamics
  • Mode Change Guidance
  • Pressure Swing Adsorption
  • Heat and Material Balance Excel Report
• Process Utilities and Hydraulics
  • Rigorous Segmented Two Phase Pipe
  • Water Hammer
  • Heat Exchanger Tube Rupture
• Flare
  • Miller Pressure Drops
  • Backpressure, rho-v2, Mach, and Sound Power Level
• Integration/Interface
  • OSI PI External Data
  • External Equation Interface
	• Platform
	  • Model Writing Improvements
	  • Graphical Sub flowsheets and Model References
	  • Scenario Conditional Runs for Batch Simulation
	  • Solver Reports
	  • Incremental Solving
	• Process
	  • More Stream Properties
	  • Rate Based Distillation
	  • Gibbs Reactor
	  • Multiple Compressor Curves
	  • Column Murphree Efficiency
	  • Operational Costs
	  • Rigorous Heat Exchanger
	• Flare
	  • Alternate Pipe Tables (done)
	  • Flare Excel Report
	• Integration/Interface
	  • Export to HTRI Exchanger Suite
	  • User Added Thermo Interface (done)
	  • Thermo Data Access Interface (done)
	  • Scripting Interface
		• Platform
		  • Model Writing Improvements
		  • Snapshot Comparison Tool
		• Process
		  • Batch Distillation
		  • Polymer Reactor Model
		  • Crude Assays and Characterization
		  • Fired Heater Model
		  • Refinery Analyzers
		  • Refinery Reactor Library
		• Utility
		  • Steam Balance Report
		• Flare
		  • PSPPM Interface
		  • DIERS validation
		  • Relief Cases
		• Integration/Interface
		  • Integrated HTRI Exchanger Model
		  • AVEVA Dynamic Simulation (Dynsim) Engine Link
		  • Black Box Interface

• Token Licenses • AVEVA CALM Licensing • Unified Engineering	• PRO/II Stream Migration • AVEVA Connect (Cloud) • Unified Engineering	• Third Party Migration • Unified Engineering

01 Vision of AVEVA Process Simulation

02 New Features

03 Roadmap

04 **Feedback and Comments**

Slido
Q8

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Cal

AVEVA™ Process Simulation (SimCentral)

Questions:

- Batch Distillation Model?
- Rigorous Heat Exchanger Model?
- What approach do you prefer for migration from other simulators?
  - Full translation to save time
  - Manual recreation to understand new features
  - Hybrid approach
- Unified Engineering and the digital twin

Slido Q6

Slido Q9

Slido Q3

Slido Q2

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ABOUT AVEVA

AVEVA is a global leader in engineering and industrial software driving digital transformation across the entire asset and operational life cycle of capital-intensive industries.

The company's engineering, planning and operations, asset performance, and monitoring and control solutions deliver proven results to over 16,000 customers across the globe. Its customers are supported by the largest industrial software ecosystem, including 4,200 partners and 5,700 certified developers. AVEVA is headquartered in Cambridge, UK, with over 4,400 employees at 80 locations in over 40 countries.

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