New Feature List for Arrow 4.0

AFT Arrow Standard

Pipes
- One pipe can represent multiple parallel pipes (useful for tube bundles)
- Enhanced fittings & losses entry for pipes
- Insulation can be included on inside of pipe/duct and effect on flow area and heat transfer can be modeled
- Insulation can now be applied even when there is no heat transfer

Junctions
- Compressor/fans can be modeled as head rise in addition to pressure rise
- Compressor/fans can be modeled as fixed head or pressure rise
- Compressor/fan speed control for suction pressure (discharge pressure still supported)
- Compressor/fan speed control if pressure is exceeded high or low
- Compressor/fan special condition open in addition to closed
- One compressor/fan can represent multiple in parallel or series
- Can calculate compressor/fan energy usage and cost
- One-Way Valve split into two junction types - Check Valve and Relief Valve
- New relief valve model for dP vs. Cv for passive relief valves
- Valves now support Cv vs. percent open (like Control Valves)
- More advanced control valve logic
- An orifice can now exit directly to a specified pressure
- Junction data can be modified through an Excel file

Solver
- Fluids can be modeled in multiple loops with heat transfer
- Heat exchangers can exchange heat with heat exchangers from separate loops which may have the same or a different fluid
- Internal insulation can be added to a pipe or duct, and reduced flow area and thermal effects (if they are modeled) will be automatically calculated
- New equation of state feature to model density as a table of curve based on pressure and temperature (similar to the previous enthalpy table)

Workspace
- By dragging right to left during selection, it selects anything it touches or encompasses
- Renumber Increment added
- Shortcut button provides fast access to explanations of shortcut functions
- Selections can be rotated right or left
- New window added to show all undefined pipes and junctions and missing properties
- New Zoom to Fit feature

Model Data
- Can see data for all scenario direct ancestors on Model Data

Output
- Can view output for multiple scenarios in Output at same time

- New Tank Summary
- Equivalent orifice area/diameter displayed for valves/control valves
- Heat exchanger secondary fluid outlet temperature and log mean temperature difference displayed for certain models
- Quick graph of internal pipes results available directly from Output window
- Specific volume now an output parameter
- Saturation temperature available for each mixture component
- Users can print Model Data with output

Graph Results
- Copy x-y data to clipboard
- Can plot profile graphs for multiple paths
- Customize feature for graph colors added
- Improved compressor/fan vs. system curve generation for series pumps

Visual Report
- Show the design factors on the Visual Report
- Can change the font and size for the title, legend, etc., independently
- More automatic updates of Visual Report added

General
- Suggest compressor/fan will search user specified database for compressor/fans which can meet operating point
- Significantly enhanced global editing of pipes and junctions (data now shown in categories)
- Batch runs for scenarios
- All printing can go directly to a PDF file
- In grids, cells that have drop-down capability have a persistent drop down symbol
- Feature to reorder scenarios in Scenario Manager
- Initialization and data files now saved to user folders

GSC Module - Optional Add-On
- Can automatically have parameters vary to meet specified goals

CST Module - Optional Add-On
- Can obtain cost for entire pipe system (has all cost capabilities of AFT Titan™)
- Can account for non-recurring and recurring costs
- Can obtain non-recurring material and installation costs from RS Means™