News and Updates

For a Cleaner Tomorrow

AQUIS & TERMIS Operation

Release 4.0

What’s New in Version 4.0?

I
- Improved usability and performance
- New features and functions
- Easy startup of modeling

II
- Monitoring and operation

III
TERMIS Operation
- Pump optimization
- Demand analysis
- Updates/operation

IV
AQUIS Operation
- Water quality
- Water balance model
- Source object
- Updates/operation

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Usability and Performance

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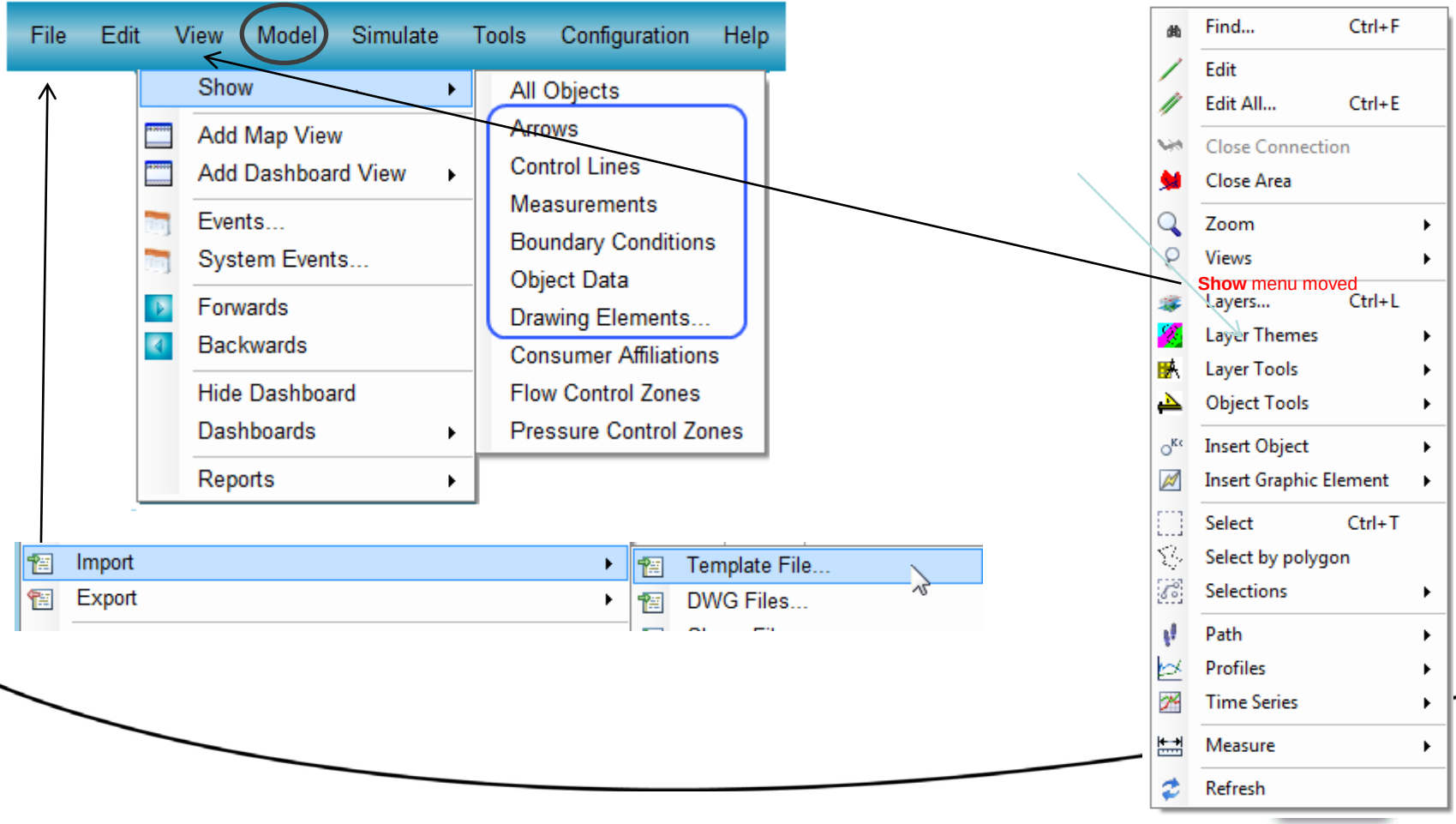
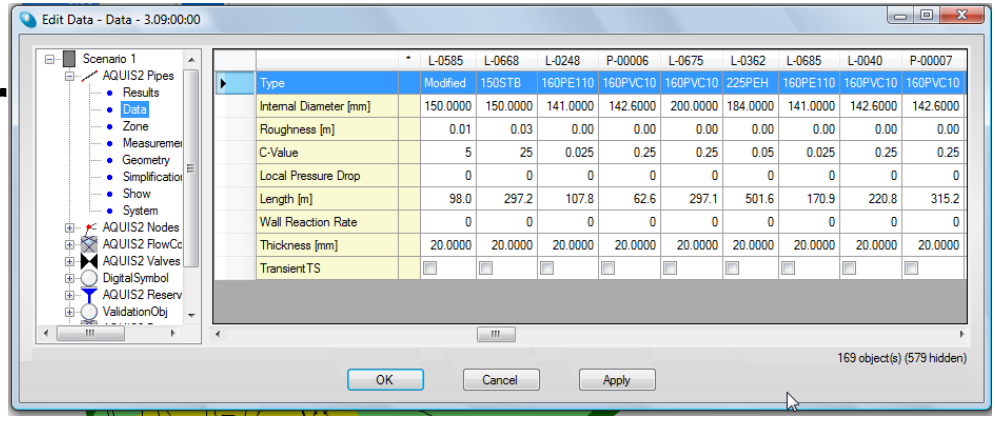
Miscellaneous Performance Enhancements

- Reduced size of install kit.
- Revised copy and move function.
- Background maps without attributes.
- More “Apply” buttons in theme configuration dialogs and dashboard configuration dialog.
- It is possible to copy/paste model objects from one model to the other.

Revised Structure for Menu Bar and Right-Click



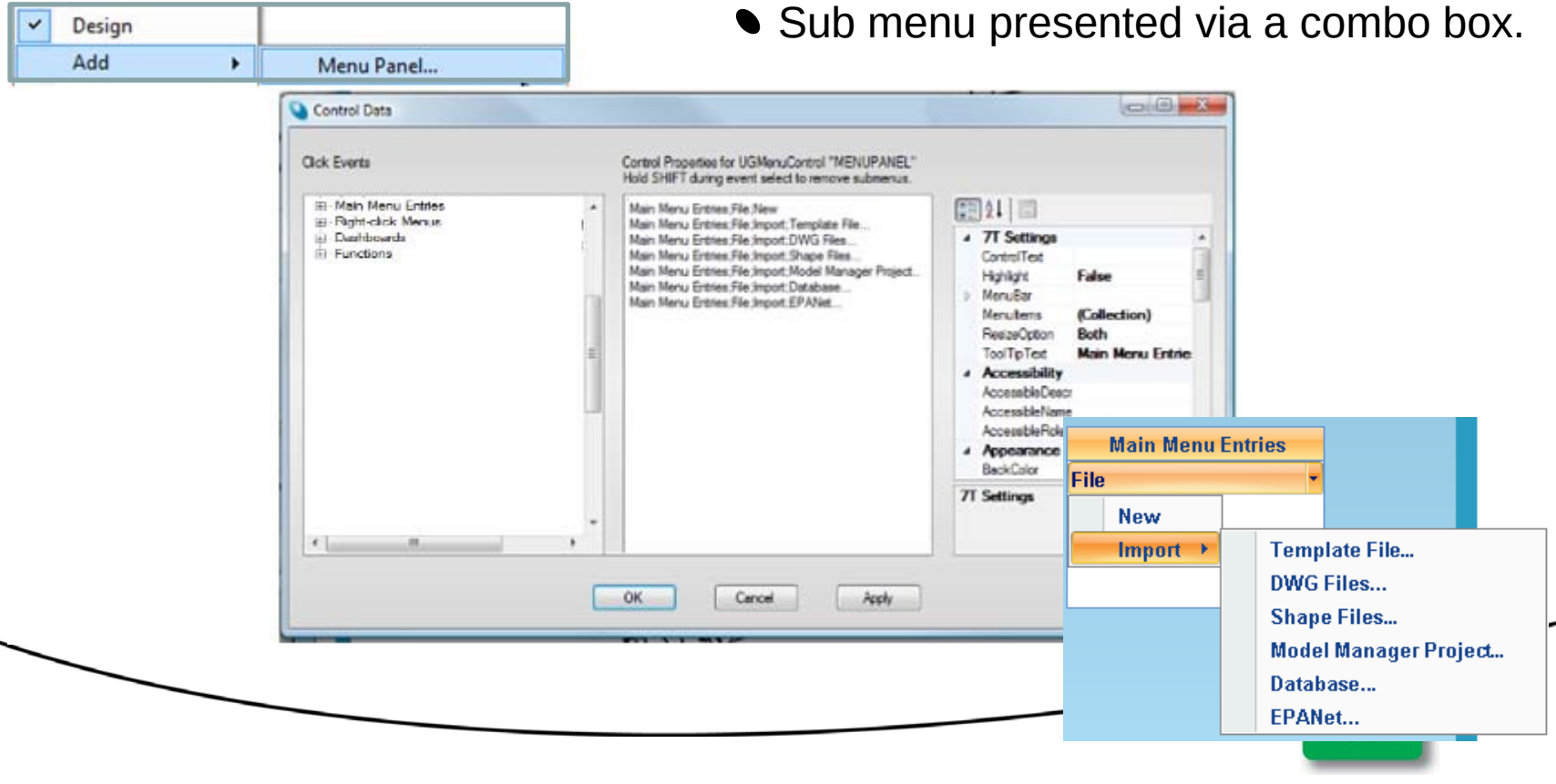
Revised Generic Editor



- Use of scrollbar with a fair performance.
- Use of arrow keys during scroll with an expected performance.
- Improved copy / paste performance.
- Copy / paste in a transposed format.
- Maintain a selection when a property page is changed.
- The scrollbar includes counters presenting the filtered number of objects compared to total number of objects.

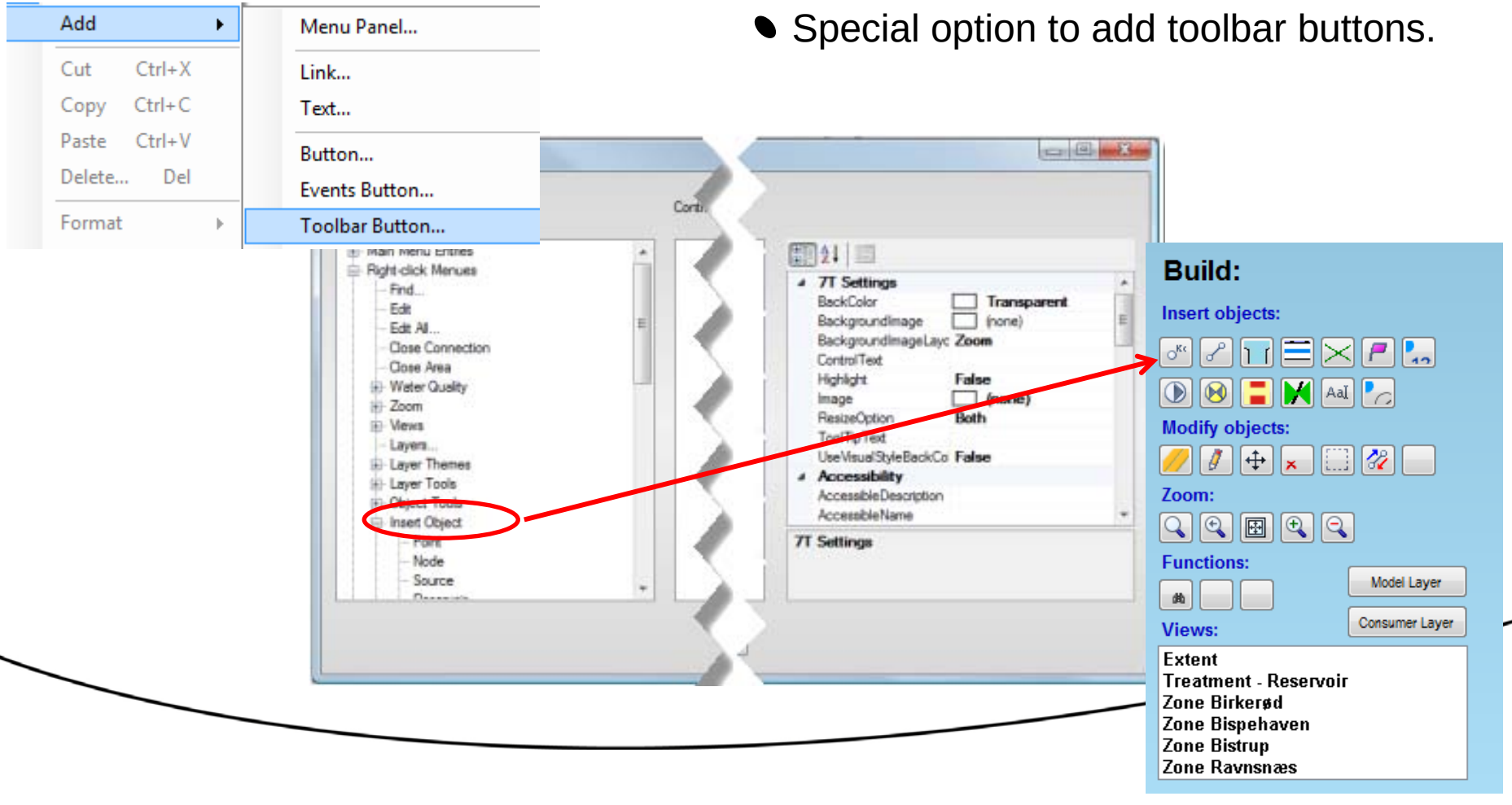
Menu Control in Dashboards

- The menu items are configured by you.
- Sub menu presented via a combo box.



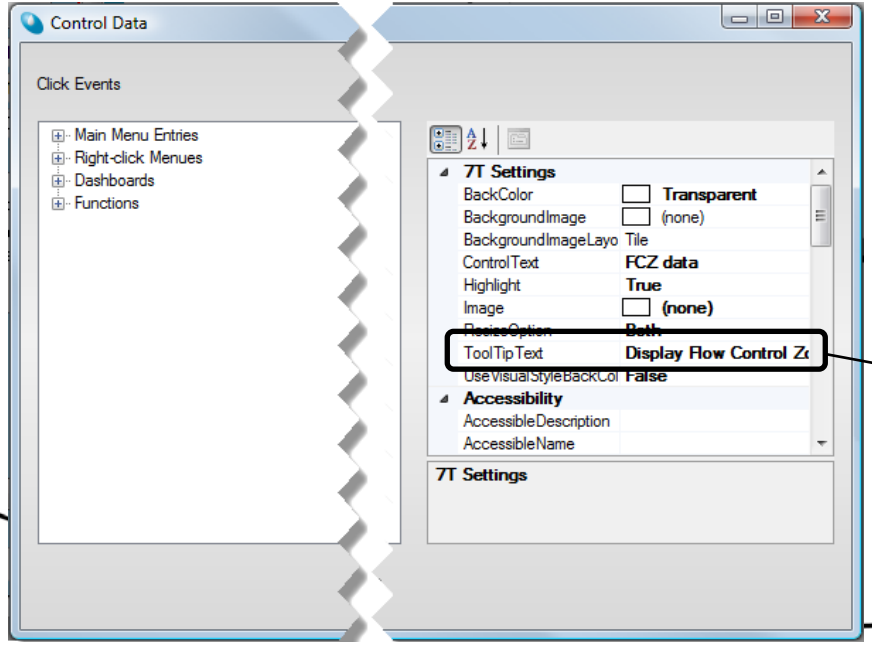
Toolbar Buttons in Dashboards

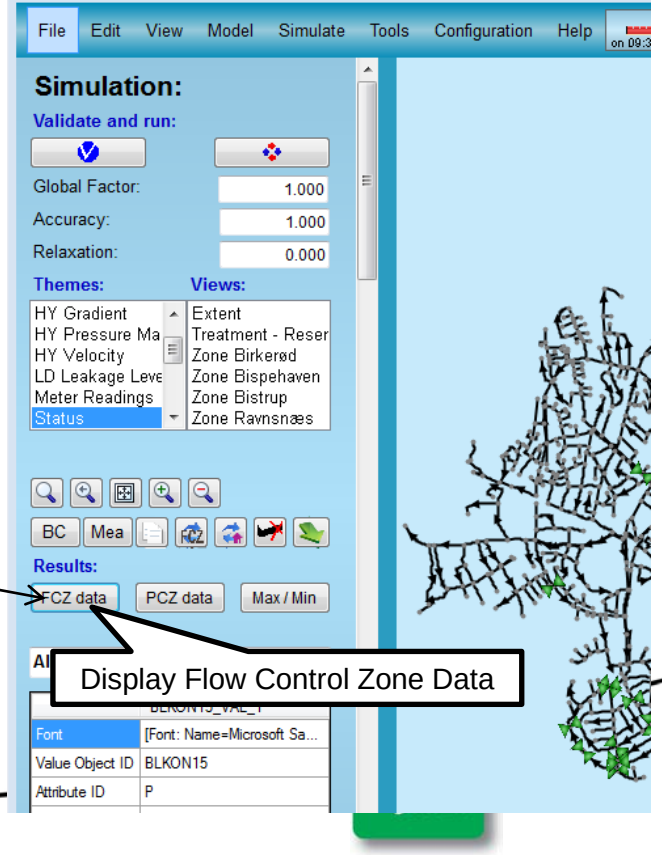
- Special option to add toolbar buttons.



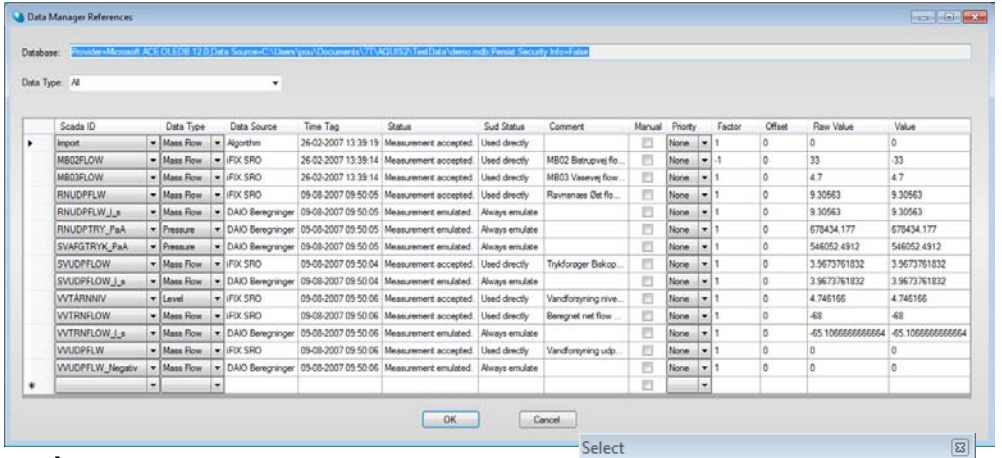
Tooltip on Dashboard Controls

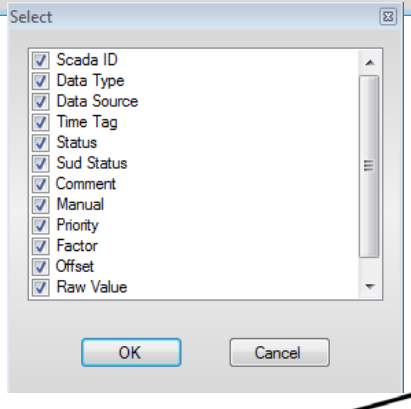
- Tooltip on all buttons.
- Configurable by user.
- Default text available during configuration.





Redesign of Data Manager Dialog





- Virtual measurement can be configured.
- Customize display of columns.
- Option to copy and paste time series data to dialog as virtual measurements.
- Define a priority for each measurement allowing the calculation of an overall submodel quality status.
- Select a SCADA ID from a combo box of existing IDs in Data Manager.

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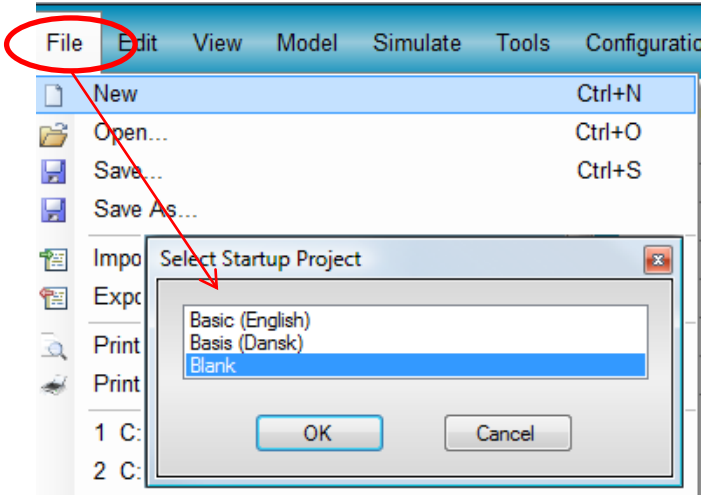
Basic Startup Models



The menu item New allows you to select between different start-up models:

- Basic model including dashboard and layer setup.
- Blank model.
- Any user defined model with specific customer setup (to be configured by SI).

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New Features and Functions - Version 4.0

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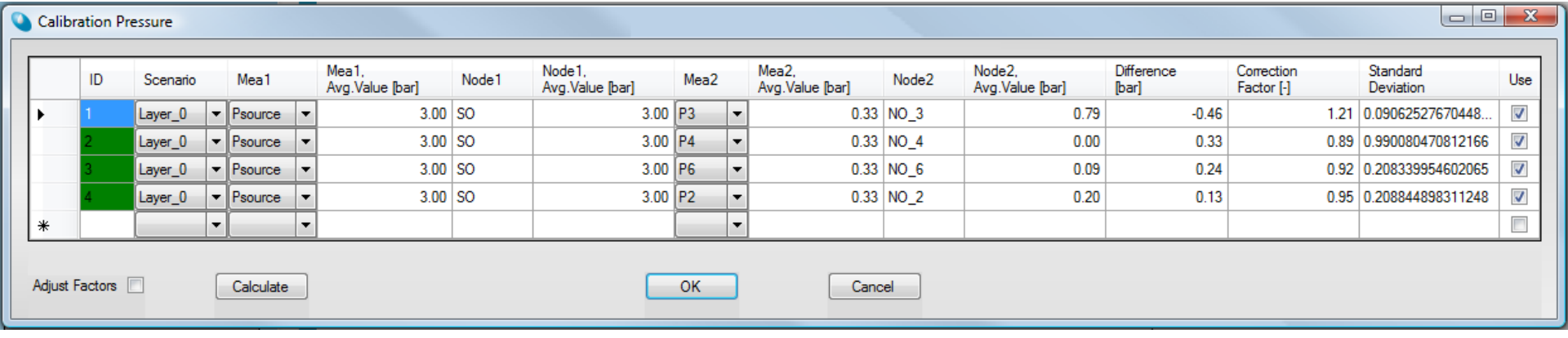
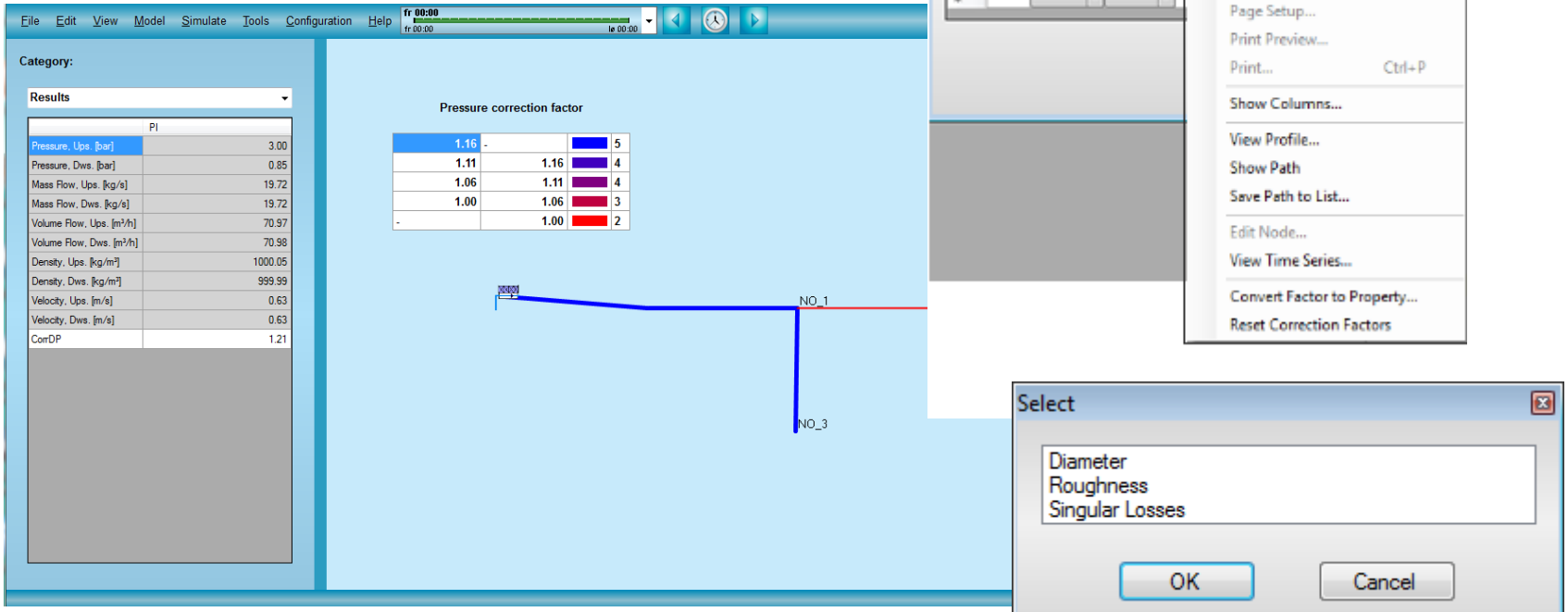
Calibration Tool

The calibration tool allows the calibration of pressure losses on a path between pressure measurements.
In addition, notice that TERMIS Operation handles heat loss calibration.

- Calculates calibration correction factor individually for pipes in a path.
- Handles calibration data for several logging periods (different paths).
- Handles pipes included in several paths.
- Distributes correction factor to either diameter, roughness, or single loss.



Calibration Tool.. /Cont.



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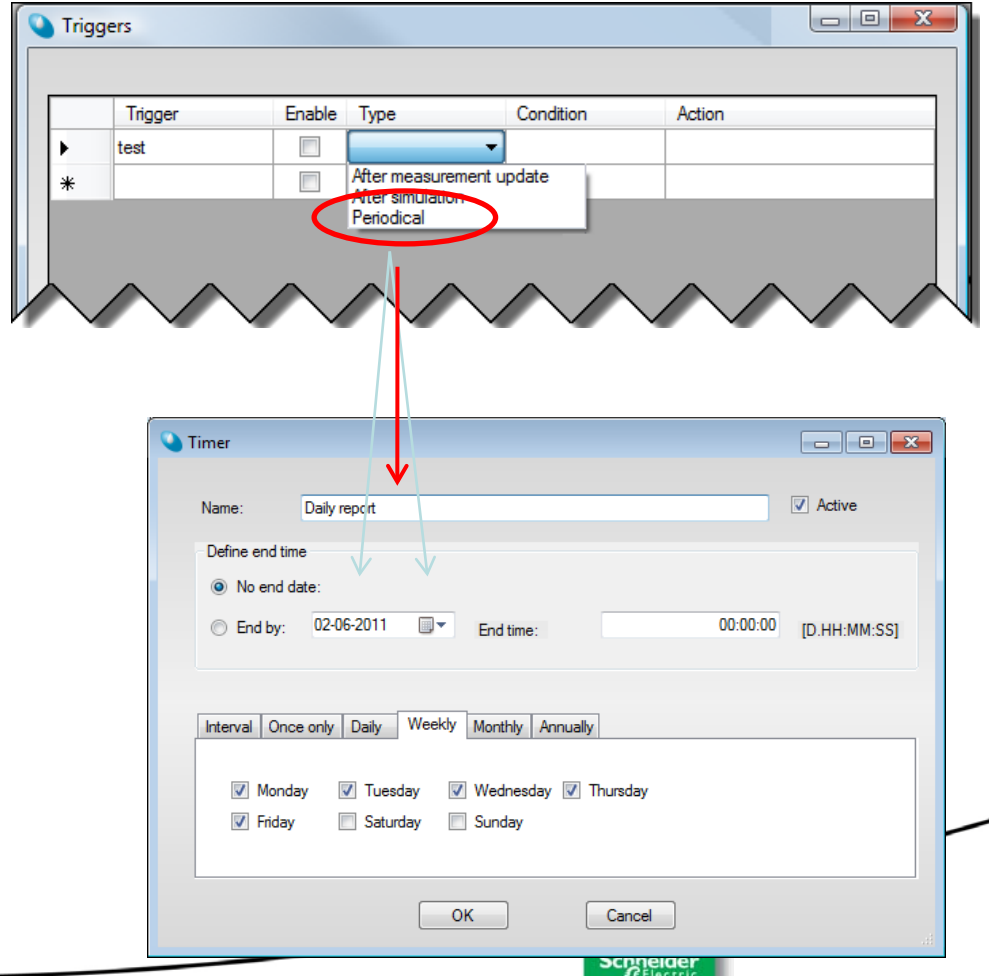
Triggers and Timers

With triggers you can activate a certain action if and when certain criteria are fulfilled.

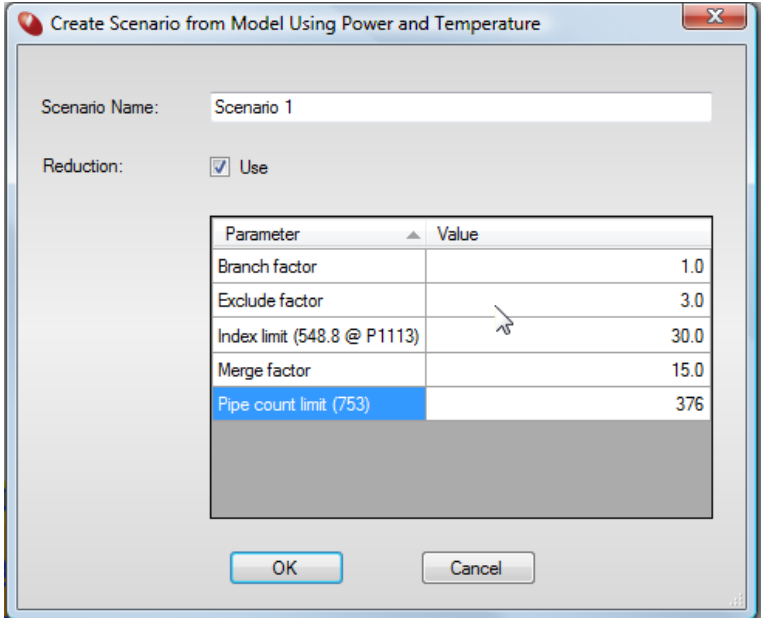
- Actions can be any menu item or several menu items. An example is starting a water quality simulation or printing a report.
- When you apply a Periodical trigger you can time the execution as needed and subsequently start the action either at a fixed system time or at the end of a simulation, and when a certain condition is fulfilled.



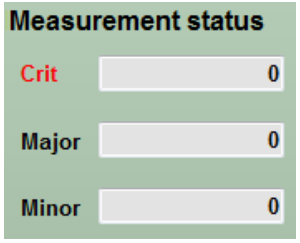
New Simplification

The simplification feature allows the reduction of any model to a simpler level.

- Convert complicated local topology to one super node.
- Simplify parallel pipes to one equivalent pipe (pressure loss wise).
- Simplify serial pipes to one pipe with equivalent data (pressure loss wise).
- Simple and fast principle.
- Ideally, you can simplify a model to two nodes and one pipe.

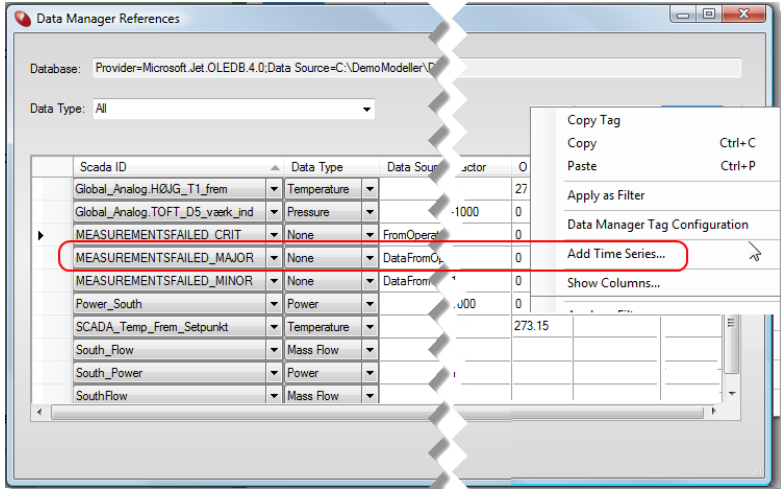


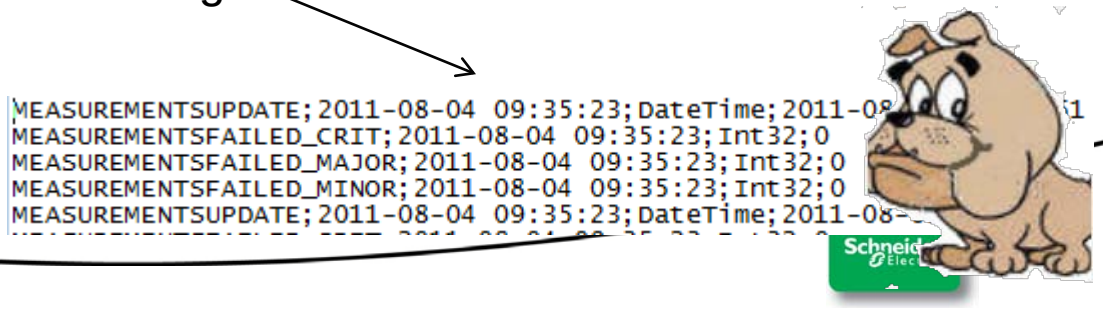
Status of Simulation/Measurements



You can retrieve a status overview for measurements in a number of ways.

- Display status as a data field from a dashboard. This view does not offer historic data.
- Display status as a time series. This view supports historic data.
- Displays status in a log file under the stand-alone application, WatchDog.

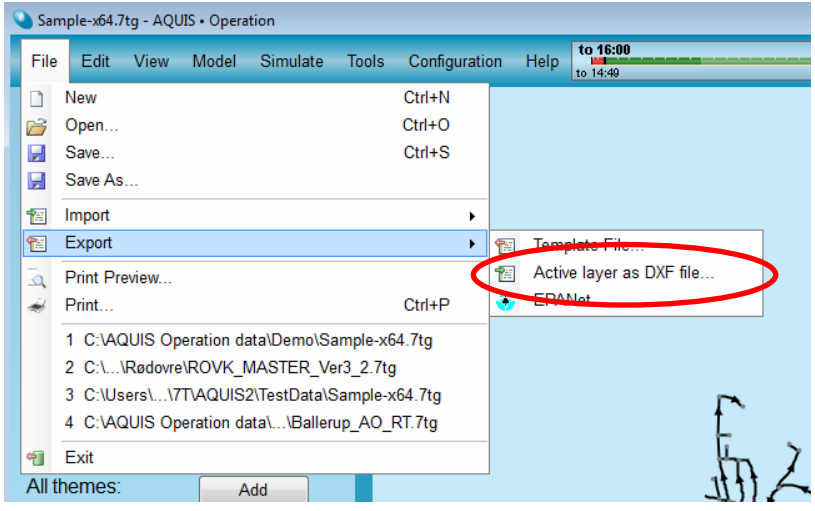




Export Topology to GIS Using DXF

It is possible to export either the scenario topology or a selection of a topology to other GIS systems.

- Export using present theme (line thickness, width and colour, node size and color).
- Supports DXF format.



Export to Excel

Any model object attribute can be exported to Excel for inspection or reporting.

	A	B	C	D	E	F	G	H	I	J
1	Pressure	Head	Mass Flow	Volume Flow	Comment	Update Status	Update Status Sub	Text Font	Text Color	Initial Pressure
2	bar	m	kg/s	m³/h						bar
3	4.34125556	81.89101	-68	-244.7883582		0	0			
4	8.59027935	77.15803	-0.001	-0.003599829		0	0			
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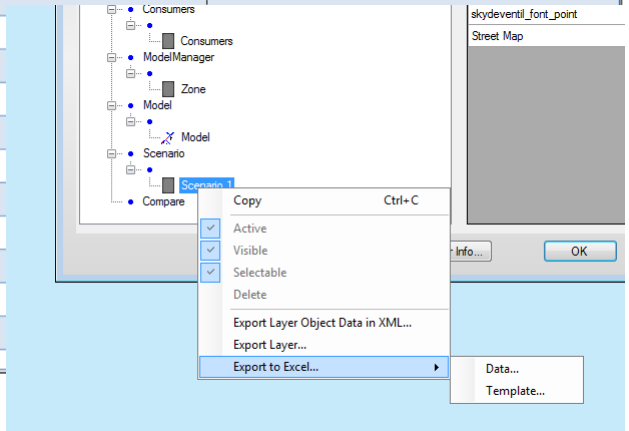

- An alternative to Crystal Report.
- System Integrator can configure reports.
- Reports can be aggregated in Excel. to summary level using Excel options.
- Does not require Excel as the OS built-in viewer is available in Windows 7.
- Handles only one time step.

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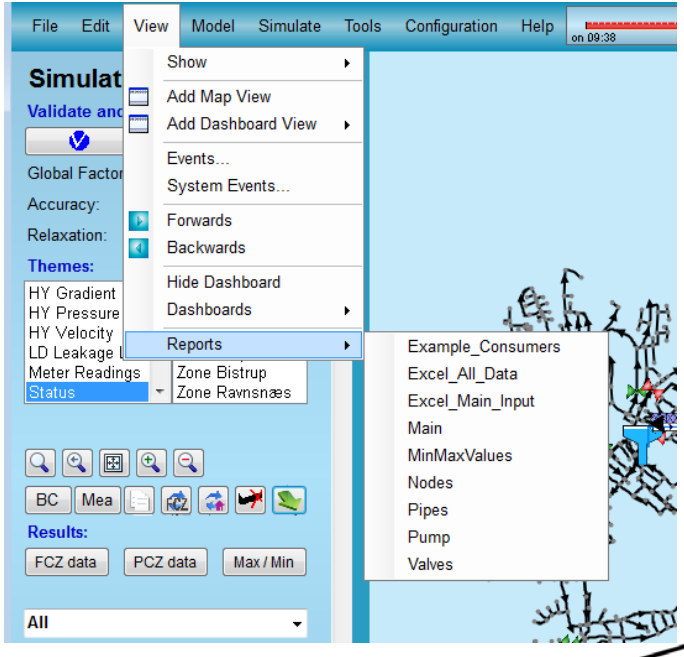
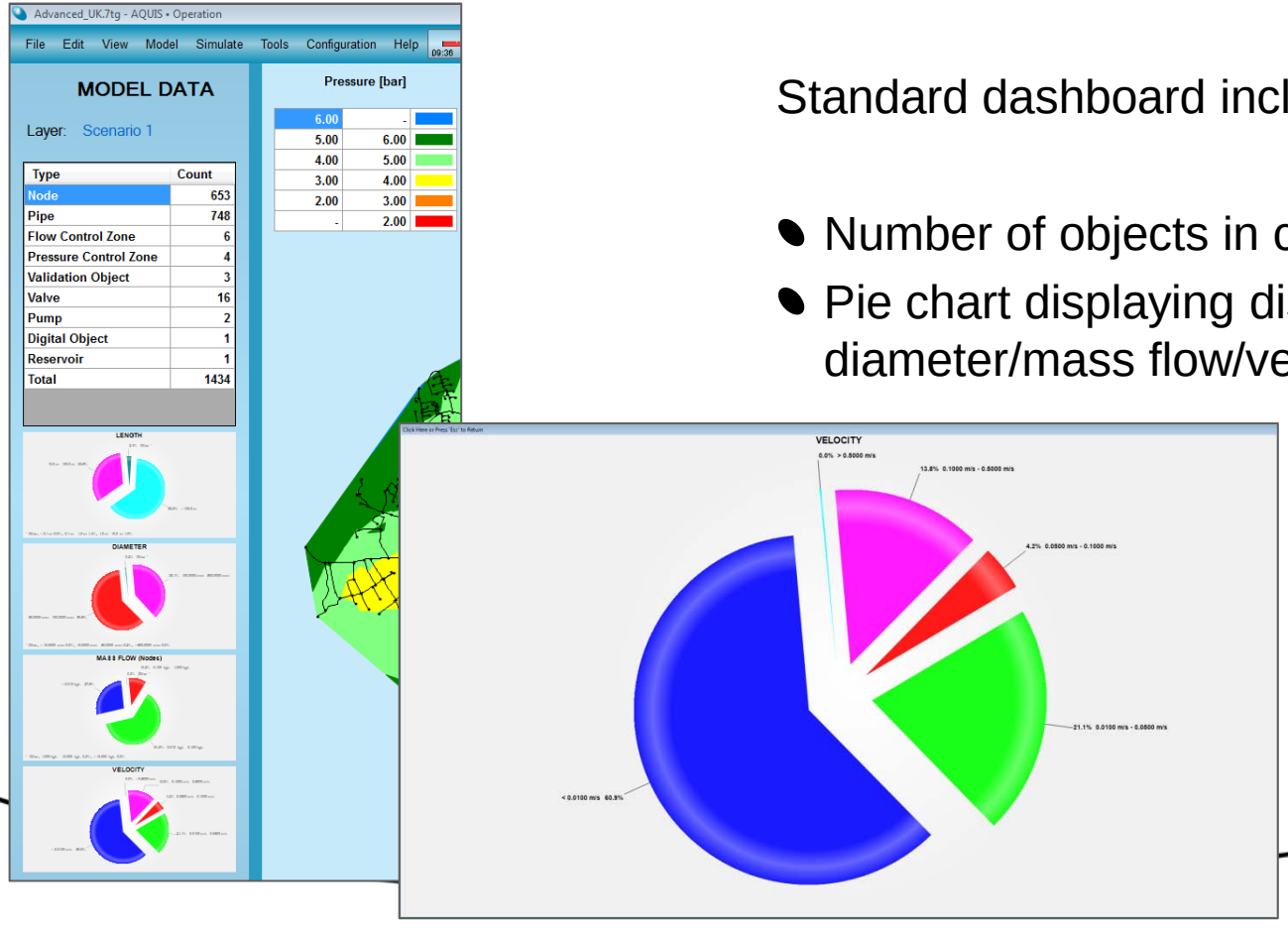
Revised Configuration of Reports

- The Report configuration tool allows the user to select between Excel based reports and Crystal Report designed reports.
- Reports can be configured to require use of named layers and specific object types.
- Reports can be routed directly to default printer.



Model Data Dashboard



Standard dashboard includes:

- Number of objects in current scenario.
- Pie chart displaying distribution of length/ diameter/mass flow/velocity in network.

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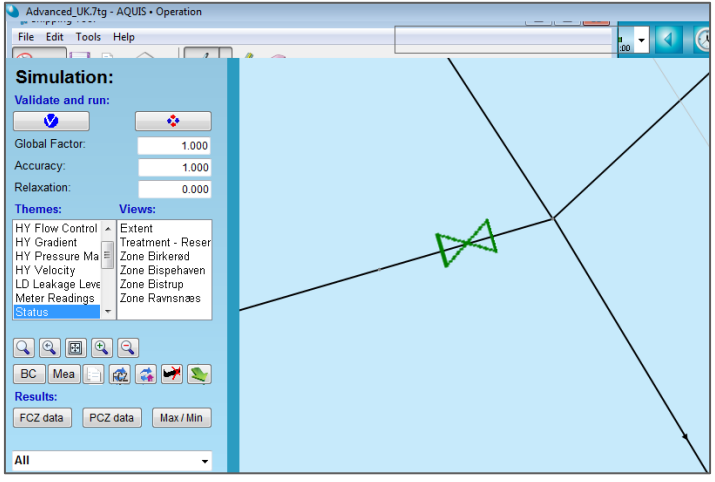
On/Off Valve Handling

A shutoff valve is a new object type used to visualize the location of on/off valves in a scenario.



- Not part of simulated model.
- Controls the status of the nearest pipes to be set as open or closed (within a certain distance).
- Shut or open status defined manually, or via a measurement.
- The close connection function searches for the nearest shutoff valve and closes the pipe at this location (within a certain distance).

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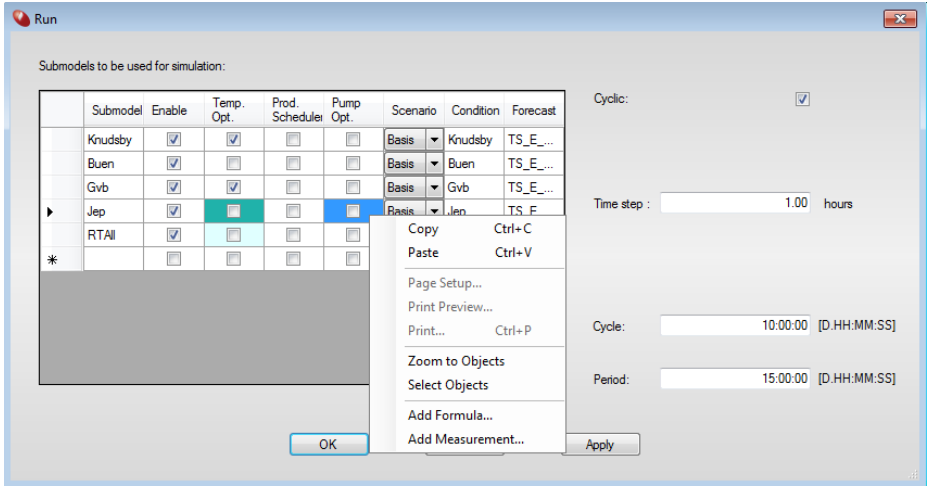
Simulation Control
Using Formula and Measurements

All check fields in the simulation dialog can be defined using a formula or a measurement.



- The field is cleared if a formula returns False or a measurement has value 0.0.
- The field is selected if a formula returns True or a measurement has value not equal to 0.0.
- A defined measurement is displayed using a light green background color.
- A defined formula is displayed using a dark green background color.

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Thin Client (Licensed Option)

The thin client controls an Operator station on a server via a Web service.

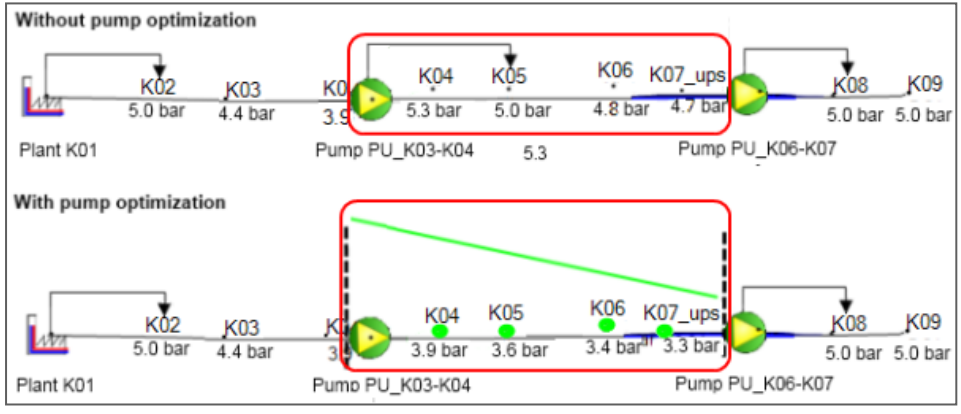
The thin client can run on any smartphone or tablet PC, as long as these have a compatible internet browser.

It is possible to conduct viewer-like functionality such as:

- Change theme
- Change view
- Zoom
- Close a pipe/valve
- Present a report

Version 4.0 -
TERMIS Operation Specific Functionality

Pump Optimization



- Exhaustive search of optimal setpoints.
- Pump Optimization implemented as in TERMIS 2.10.

Output:

- Optimal pressure setpoint.
- Optimal number of pumps in Operation for each pump station.

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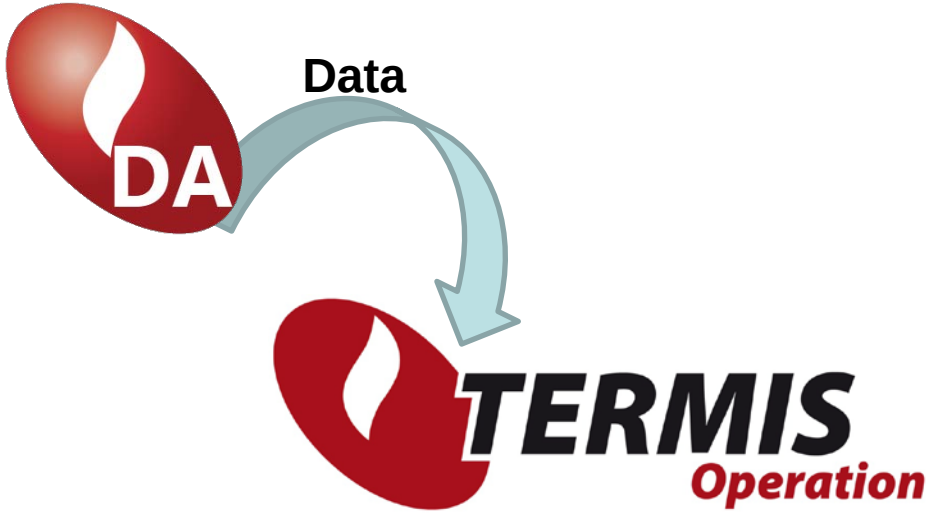
Demand Analysis Model



You can process historic data from the Demand Analysis application and combine it with forecast data for the outdoor temperature (time series). The result is an estimate of the future demand.

- Based on hourly measurements of power and outdoor temperature for a year stored in Data Manager.
- Linear regression coefficients calculated for every hour in a week based on the full set of measurements.

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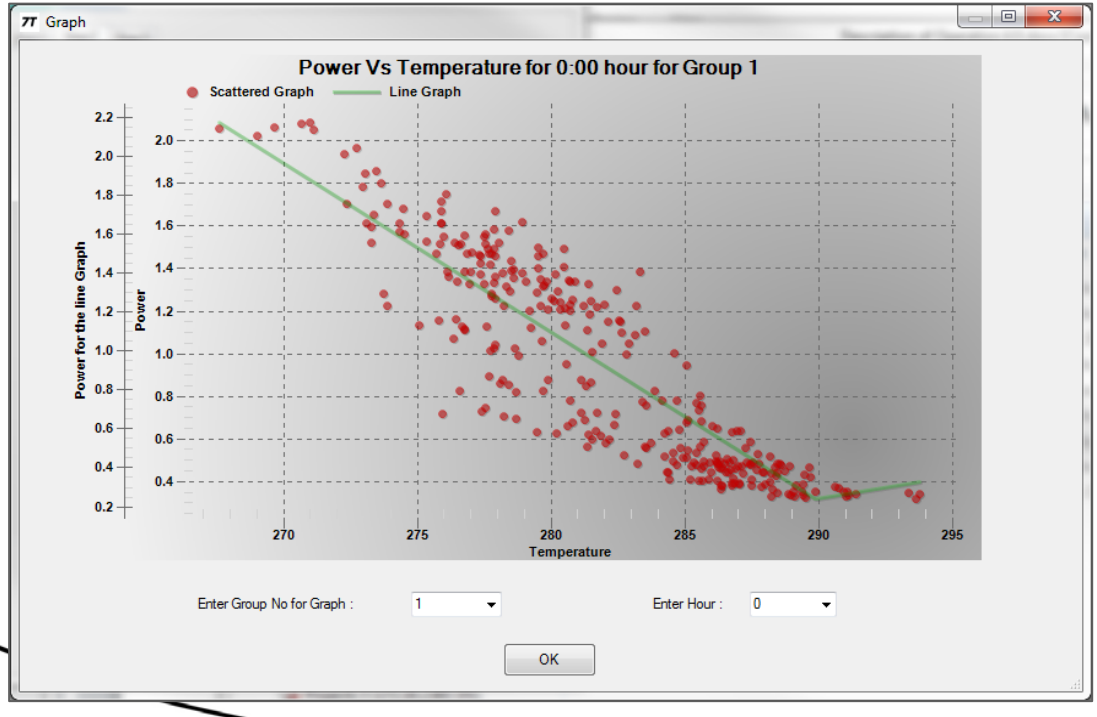
Demand Analysis Model ../Cont.

Time and outdoor temperature dependent demand is calculated in TERMIS Operation using the following formula:



For T < Tref:
E(t,i) = (A1(t,i) * T + B1(t,i))*EA

For T => Tref:
E(t,i) = (A2(t,i) * T + B2(t,i))*EA

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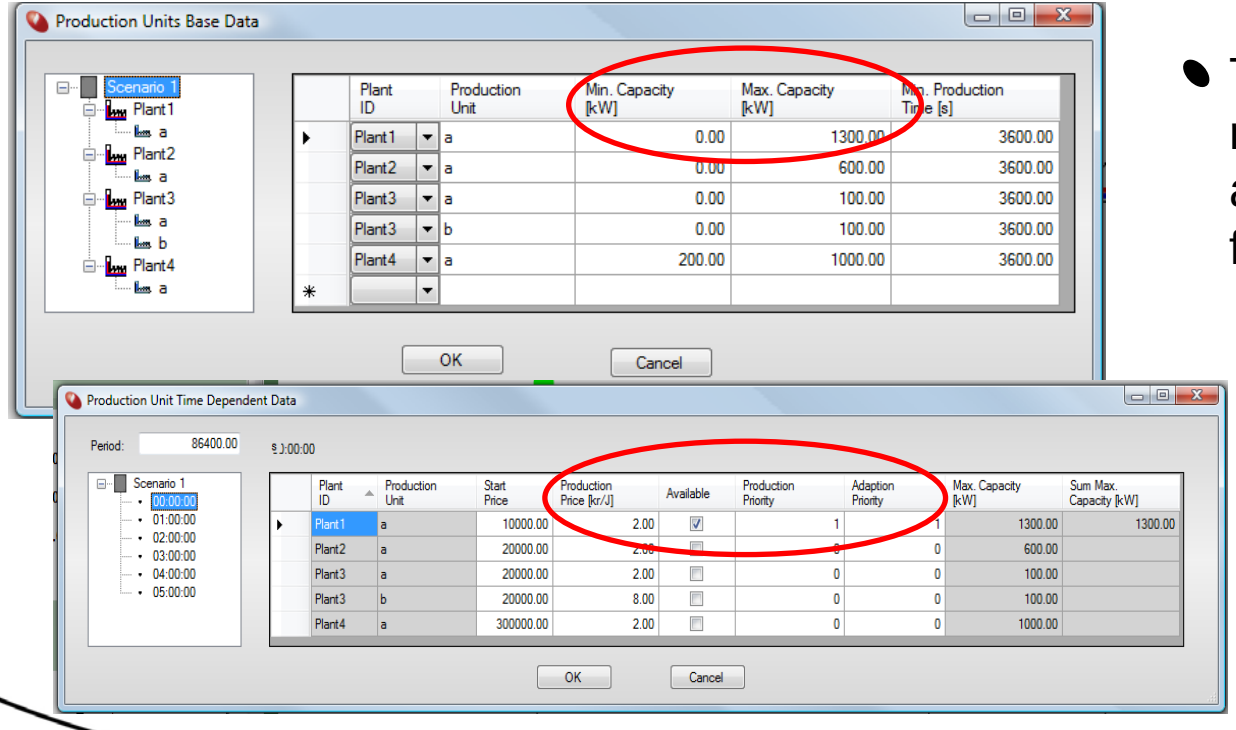
Migration of TERMIS 2.10 Models to Operation

The following additional features are introduced to the migration process:

- Simple text in the TERMIS 2.10 model is transferred as text into Operation – important model information is stored here.
- Pipe with a unique reference to catalog includes look-up formulas for pipe attributes.
- All actively used demands in the TERMIS 2.10 database must be reproduced in Operation with the same values.

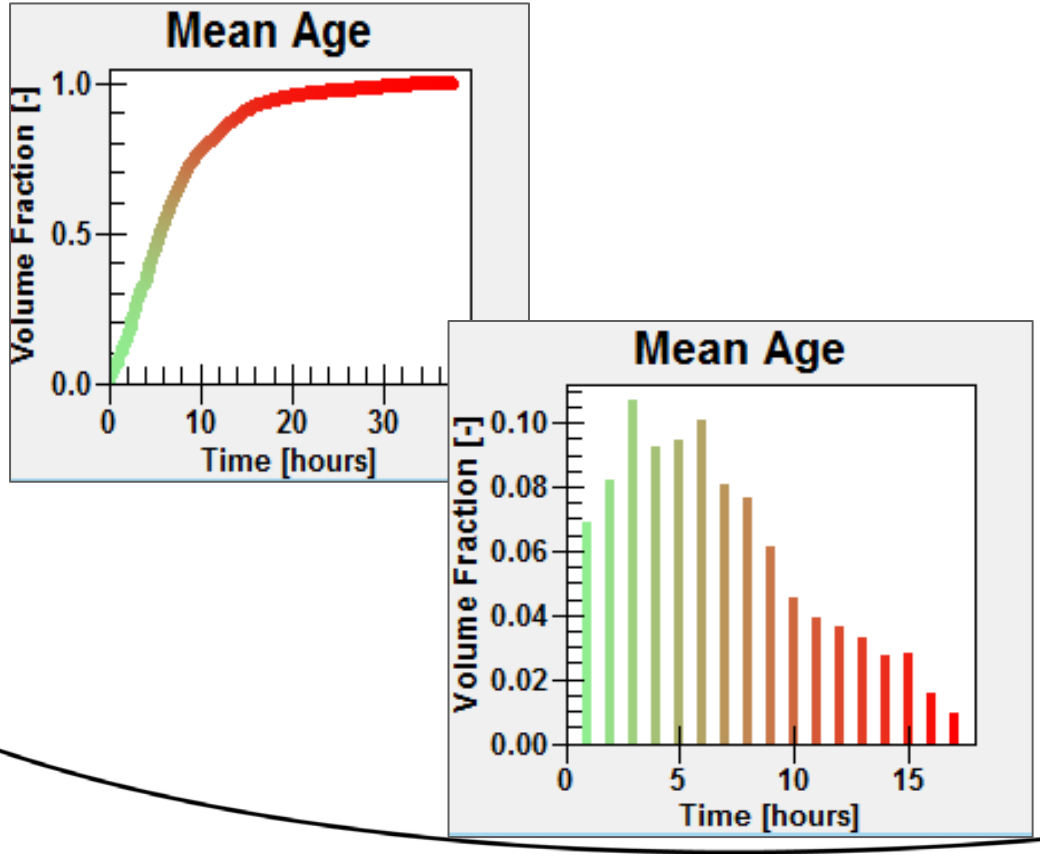
Measurement Used to Define Boiler Data



- The columns marked with a red circle are either configured as a static value or as a formula / measurement.

Version 4.0 –
AQUIS Operation Specific Functionality

Display Water Age Distribution in Dashboard



- Mean age, minimum age or maximum age distribution display either as a distribution or as an aggregated curve.
- Option to display the age for a submodel, a scenario, or a reservoir.

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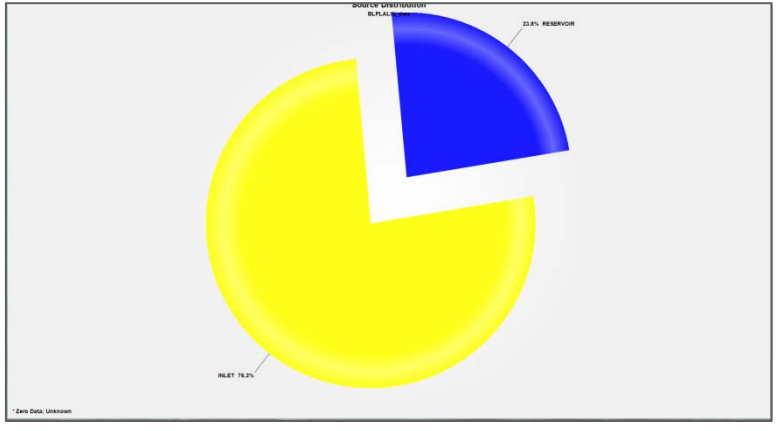
Display Water Source Distribution Using Pies



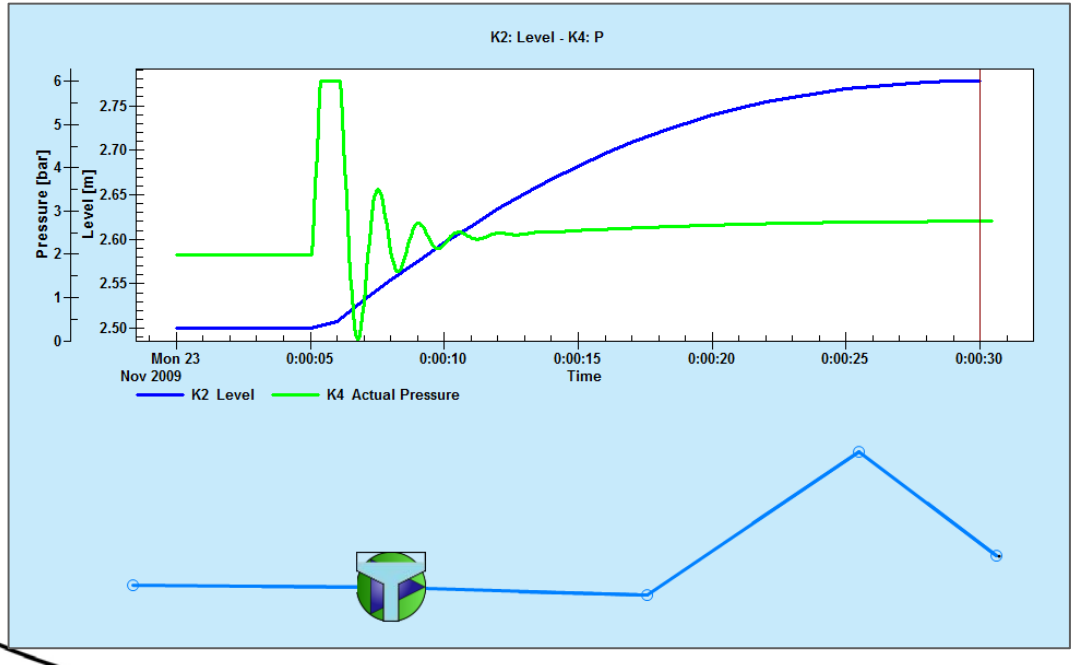
The dashboard pie diagram displays the actual source fractions in the selected node for the current time.

- The update function is similar to the object list. Left-click a node to display data until next node is ”clicked”.
- The diagram requires a water quality simulation.

IWA Water Balance Model

- IWA (International Water Association) water balance model implemented at flow control zone level.
- Based on manual input for a certain period defined typically by the period of meter readings at customers.

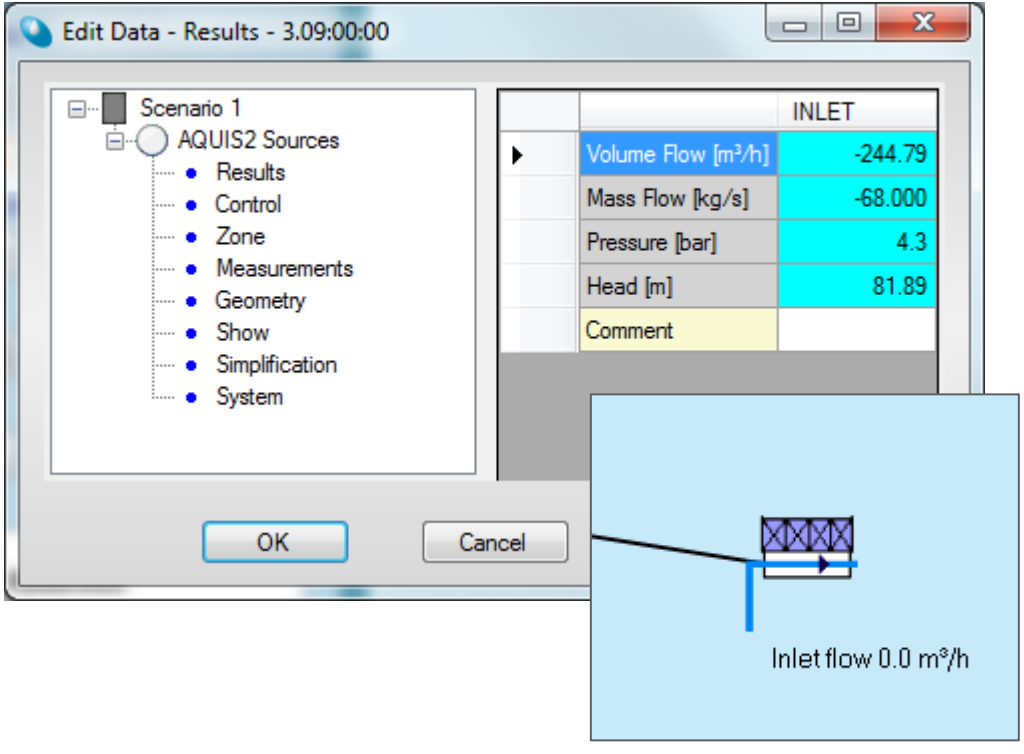
Transient Simulations



Version 4.0 sees an enhancement of the transient simulation process in regards to:

- Option to present selected data with a time resolution less than 1 second.
- Surge relief valves.
- Pressurized and open tanks.

Source Object



New source object type:

- Built-in symbol.
- Easy filter on sources in Generic Editor.
- Update old objects by adding a source on top of an ”old” source node.

Thank you