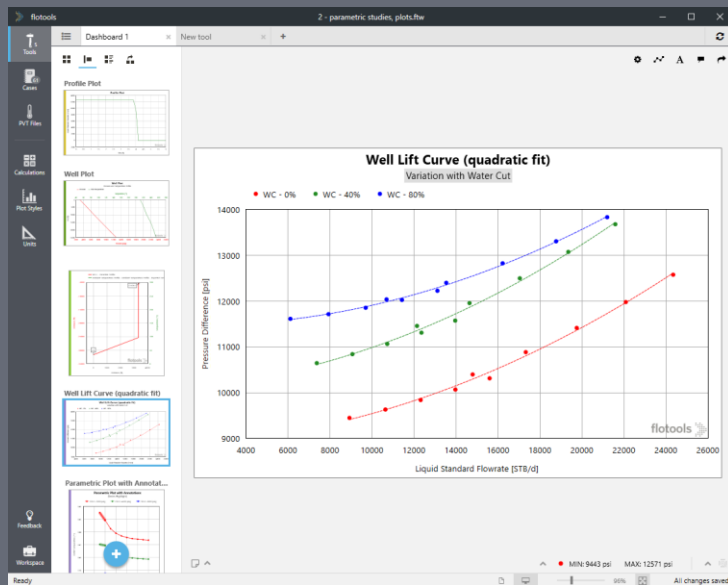




FLOW ASSURANCE SIMPLIFIED

flotools is a powerhouse of pre- and post-processing tools to help you do more flow assurance and less data manipulations. Whether editing input files, creating and running parametric studies, or plotting and analyzing simulation results in real time, flotools has the power to do anything you need with unparalleled ease.

Flow assurance engineers use several software tools to assist them in making important engineering decisions on a daily basis. Most of these tools do well at performing engineering calculations. However they leave a lot to be desired in the area of helping the user perform advanced analyses on the calculated data. flotools has been created with a vision to bridge the gaps that exist in the flow assurance workflow from data gathering to reporting.

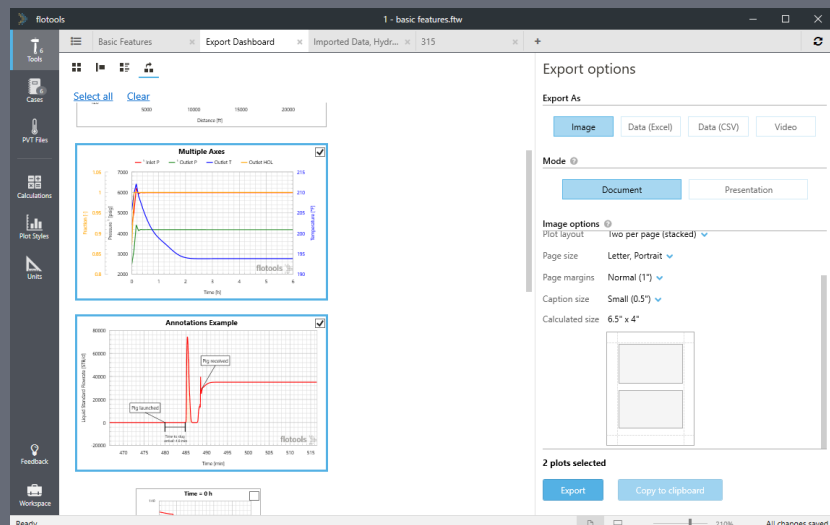


Advanced data visualization

flotools has the most advanced flow assurance analysis engine. By combining simulation inputs and outputs, flotools lets you analyze simulations more naturally, e.g., profile outputs from multiple branches are automatically joined together according to the network connectivity, trended outputs can be plotted right alongside time-varying inputs, and calculated variables allow you to plot velocities automatically derived from volume flow rate outputs and diameters in the input file. Parametric plots allow you to summarize results from multiple simulations in one easy-to-consume plot. In-plot annotations let you call attention to points of interest that are automatically deduced from reading input and output files. Simply put, there is no parallel to the flotools' analysis capabilities in the market.

Reporting made easy

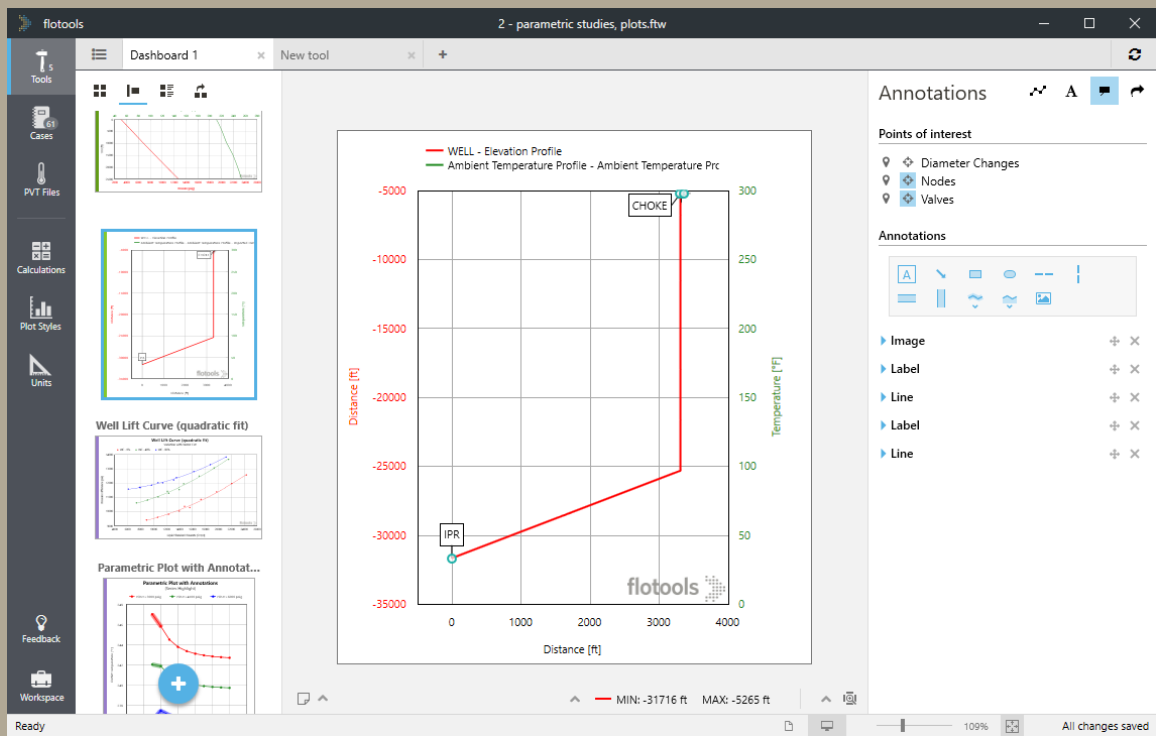
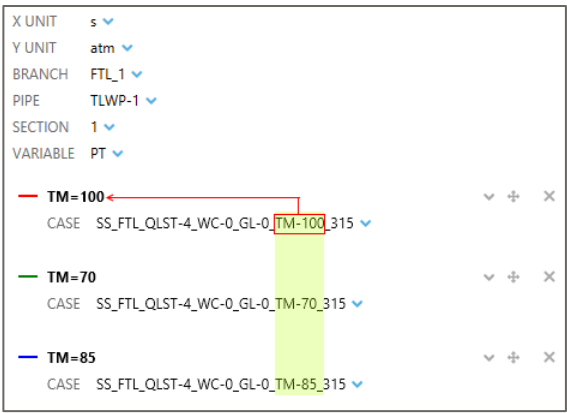
flotools makes it easy to get report-ready charts right from the interface. flotools lets you define your own custom styles, including the ability to add your logo to the plots on export and defining separate style options for documents and presentations. Resizing chart images to fit your document or presentation layouts is no longer required. Enter the appropriate dimensions into flotools and it produces crisp, high-resolution, print-ready images devoid of blurry lines and stretched-out fonts. You can also share your plots with other teams that do not have flotools by exporting them into a compiled Excel workbook with plots and source data for easy consumption.



Smart all over

Smart legends automatically detect which feature of a series should be used as the series title based on the collection of series on a plot. The smart series panel groups together common properties allowing the user to quickly switch from one set of plots to another with a single click. Cross plot variable selection automatically highlights only those inputs that are different across a set of cases making it a breeze to cross plot results of a parametric study.

flotools has plenty of smart features built into every aspect of the program with the goal of making the flow assurance workflow more efficient.



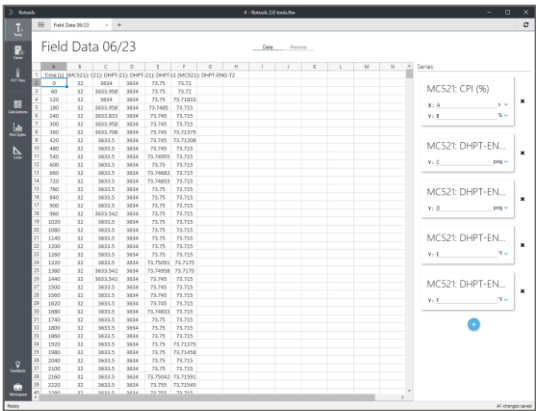
Annotations

flotoools makes it easy to call attention to important features of your plots via the annotations panel. flotoools also conveniently exposes points of interest, i.e., points along the plot that might be of interest based on events and changes by analyzing the input and output files. For example, nodes, named positions, valve locations are called out for a profile plot. Setpoint changes, and pig entry and exit times are called out for a trend plot. The annotations are anchored to the data so they stay where they are supposed to when you change units or pan and zoom around the plot.

Bring in your data

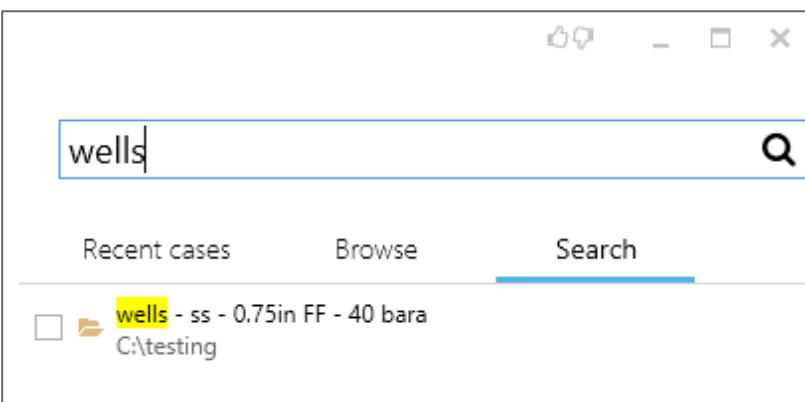
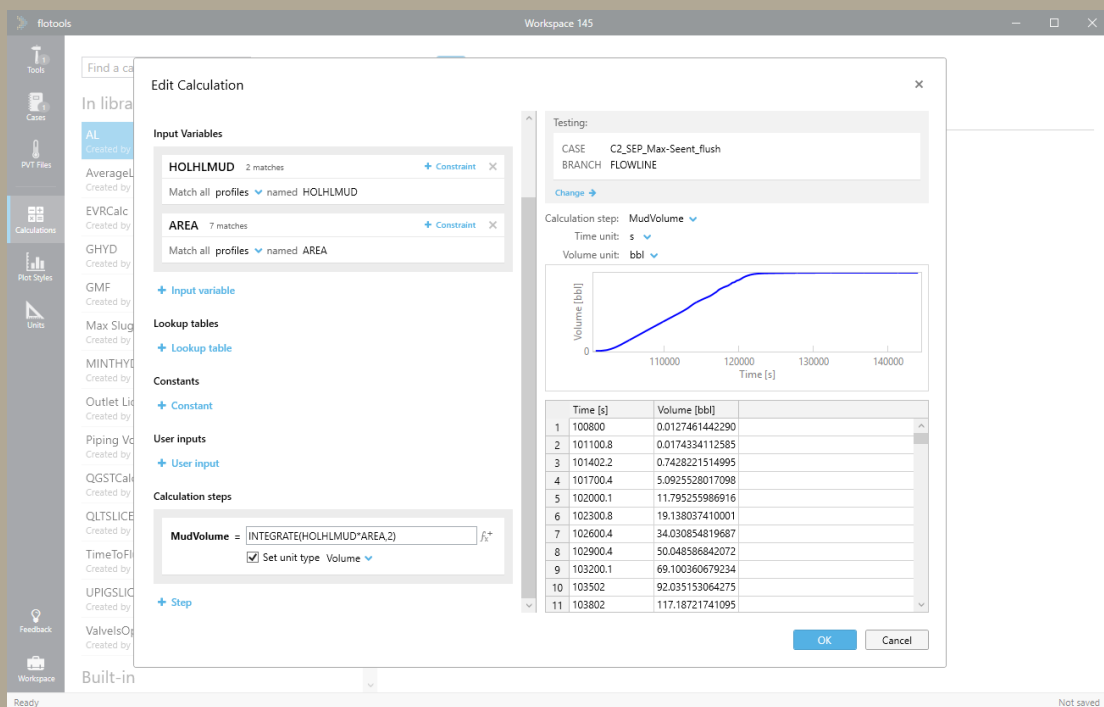
The imported data tool makes it easy to bring in data from external programs such as PVT simulators, or from your field data historian to plot alongside simulation results. The new Excel-style interface allows you to bring in multiple columns of data and create data series that are plottable in flotoools within minutes.

Data that is imported is available to any tool that can consume it. Trends, profiles, and X-Y data series are available to plot, use in calculations, or use it in any other tool that accepts the data format that you bring in. This makes it easy to do, for example, model benchmarking where you might want to plot field data against model predictions or do calculations where you might want to calculate a pipeline efficiency by taking the ratio of measured frictional pressure drop to predicted.



Calculations

The powerful calculation engine behind flotools' built-in, automatic calculated variables is available to users to define your own calculated variables. User-defined variables allow users to perform powerful post-processing of data to calculate additional quantities based on OLGA outputs. Vector mathematics and units-aware calculation engine allow users to perform what would be cumbersome tasks in Excel. One simple formula (*see screenshot*) turns a mud holdup profile into a trend of the mud volume in a pipeline. Lookup function allows users to calculate hydrate propensity of a pipeline across multiple hydrate curves with just one simulation.



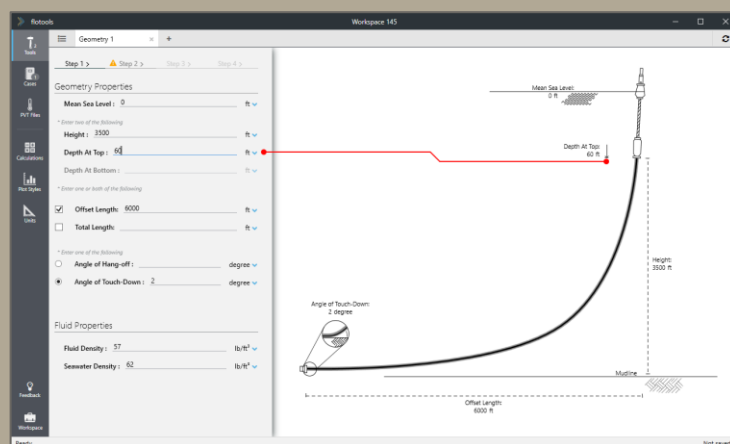
Search for what you want

Search is pervasive in flotools. Searching for cases is made possible by the flotools crawler, a background application that watches for new files in folders that you tell it to watch. Once new files are found, the crawler indexes them and stores keywords, such as labels, in a database that makes subsequent searches really fast. You can also search for variables by their name, position, object label, object type, etc. flotools' smart algorithm adds additional tags to variables, such as "Inlet", when it detects the position of a variable to be at the beginning of a branch.

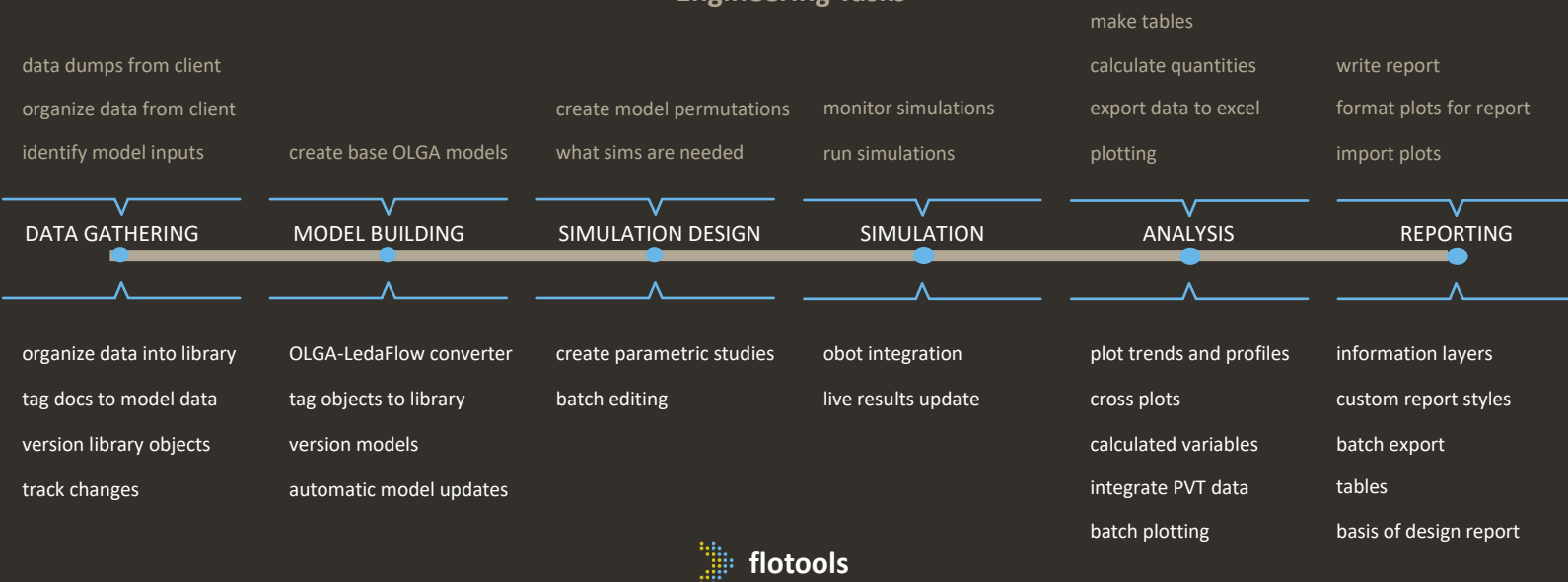
Modern user experience

flotools exemplifies evoleap's mission to create simple, beautiful, and efficient software. Every tool has been designed to create an engaging and intuitive user experience.

While some of the tools, such as the riser builder and corrosion calculator, have advanced numerical computation algorithms, the interface does not burden the user with these complexities. Instead, the tools break down the complexities into steps that the user can easily follow and offers visual cues to guide the user through the process.



Engineering Tasks



A Long Road Ahead

flotools has an extensive roadmap of features planned. As of the latest release (version 2.0), flotools includes all the features discussed so far and more. The analysis and reporting features in the workflow graphic above are almost all included. The ongoing work is focused on filling in the gaps in the pre-processing workflow.

New features planned for the immediate future include preprocessing activities such as model builders, including pipeline and well builders, and calculators for performing common tasks such as calculating overall heat transfer coefficient, thickness of soil layer from burial depth.

flotools also integrates with another product of evoleap called obot. obot allows users to submit simulations into a managed, prioritized queue and obot's intelligent scheduler runs the simulations as licenses required for the simulations become available.

About evoleap

evoleap is a software and services company dedicated to making flow assurance better. Our broader mission is to create a step change, an evolutionary leap, in engineering software.

All of our software are designed to be simple, beautiful, and efficient. Our team is composed of engineers with background in oil and gas industry including over 50 years of combined experience in flow assurance software, and UX designers. This experience combined with active involvement in flow assurance allows us to create unique products that are of immediate value for flow assurance engineers.



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