

simulation
software limited



varisimTM
Pipeline Management

Pipeline Management

varisim™ helps you simulate and manage every component of a pipeline system with complete accuracy in online and offline mode.

varisim™ provides an unprecedented level of control for liquid and gas systems of any size, including Flow Assurance studies, Pipeline Management, Leak Detection, Optimisation, Monitoring and Training Simulation.

The **varisim™** Pipeline Management applications provide information to the operator to manage their pipelines effectively.

Batch Management

The Batch Management facility comprises three main functions - Batch Scheduling to schedule the batch delivery process, Batch Tracking to track the products as they traverse the pipeline and Batch Predictive to predict the movement of scheduled batches. Each can be easily expanded to include more complex management functions.

Batch Scheduling

The **varisim™** Batch Scheduling process provides a high level of control before the transfer of batches occurs. It allows you to pre-define the sequence of batches to be delivered in a schedule that clearly identifies the volume to be transported, its destination, customer details and its type. This process incorporates easy to use tools that allow quick definition of the schedule through drop down menus and sorting and sequencing algorithms.

Batch Tracking

Once the schedule is defined and submitted, the volumes of product entering the pipe can be monitored in accordance with the schedule with over-delivered and under-delivered volumes clearly identified to the operator. The batches are tracked in the physical sense

by the **varisim™** simulator, and the progress of each batch can be accurately monitored as it progresses through the pipeline or network. Estimated times of arrival are continually provided for any defined locations on the pipeline or network. Virtual batch volumes and stripped batch volume can be monitored for efficient transfer of batches to the pipeline customers.

Batch Predictive

The Batch Predictive functions take the schedule and predict the future movements of batches through the pipeline using an offline **varisim™** simulator. The operator is able to specify pump statuses, tank starting conditions and variable supply / demand requirements that will continue to exist over the duration of the batching process in addition to the set-points of any control valves. Predictive simulations use the batch schedule as an input to the predictive process to determine the movement of the batches over the batching timeframe.

Capacity and Storage Management

There are three levels to the standard Capacity and Storage Management process which can be easily expanded to include more complex management functions.

Current inventory distribution is available directly from the **varisim™** simulator and can be made available to an offline predictive simulator. At each supply or customer demand, pre-defined future flow or pressure variations can be used to drive the simulator. These variations can be nominations, fixed values or user input, or they may be taken automatically from historical input, load forecasting tools or optimiser output. Rapid simulations are then conducted to establish the future inventory distribution, storage levels, future flow, pressure and temperature profiles and the variation in the available capacity and storage levels.

Alarms are raised if zone inventories exceed or fall below allowable limits or if maximum or minimum allowable operating pressures are exceeded. Actual storage variation can be monitored against the predicted storage variation and at any stage you can change the future flow variations to predict available capacity and storage variance.

varisim™ also offers comprehensive applications for:

- **Leak Detection**
- **Optimisation**
- **Flow Assurance and Surge Analysis**
- **Training Simulation**
- **Monitoring Functions**



Exceptional customer support

As a globally significant supplier of pipeline management solutions, we supply quality, robust, repeatable software. Alongside these exceptional products you can expect the customer service you need to get the best from our software at all times, stay up to date with innovation and excellence, and maximise the return on your investment.

Simulation Software Limited

varisim™ has been developed by Simulation Software Ltd. As part of the Hydraulic Analysis Group, SSL is dedicated to the development and supply of modern high performance pipeline simulators and pipeline management software.

We employ technical specialists and industry experts with a wealth of background experience in running, installing and developing advanced simulator and pipeline management applications. This ensures that every delivery performs to its maximum capability delivered by staff who really do know their industry.



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