SimSci™
by AVEVA

OPERATOR TRAINING SIMULATORS

Operator Training Simulators (OTS) allow operators to train on a computer in an identical environment to the control room. AVEVA simulation and training tools provide in-depth process understanding through accurate simulation models of the plant that aid in process analysis and operator training. This provides safe and efficient operations that benefit the plant, the workers, the surrounding community and the overall profitability of the company.

Summary

Dynamic Simulation and Operator Training Simulator (OTS) solutions enable companies to rise above the challenges of designing, commissioning, controlling and operating a process plant safely, reliably and profitably.

Business Value

Customers have found that a relatively small investment in an OTS can save hundreds of thousands or millions of dollars. Benefits range from:

- Capital cost minimization on new design or revamps

- Start-up reduction by 3-5 days

- Increased safety and awareness

- Improved operator readiness

Leading the Way to Operational Excellence

Today control room operators run mission critical processes across multibillion dollar businesses where missteps can be very costly in terms of safety, availability and profitability:

- According to a recent ARC Advisory Group study titled "Why We Need a Better Approach to Procedural Automation," it was reported that operator error results in 42 percent of unscheduled plant shutdowns accounting for the highest dollar losses per incident in the process industries

- A recent J & H Marsh & McLennan report documents that the average cost per major incident related to Operator error exceeds $80M

- The Chemical Safety Topical Committee sponsored by the Department of Energy (DOE) findings reveal there is one chemical incident per day on average in the U.S. with an estimated cost over $2 million per incident

These challenges are compounded by both mobile and aging workforces. This creates the need for a framework and process to assimilate newer less well trained workers more quickly than ever before.

Operator training has always been a priority for Operational Excellence. But today, making better decisions faster is not just an advantage, it's a mandatory requirement to stay in business.

Driven by a growing awareness of these issues, today many companies are turning to AVEVA for help with initiatives that drive Operational Excellence. One of the tools in the AVEVA toolkit is its industry leading Operator Training Simulator solutions that help companies to rise above the dynamic challenges of designing, commissioning, controlling and operating their process plants safely, reliably and profitably.

Operator Training Simulators are now available via the cloud in addition to the traditional on-premise access method. Our cloud access has not only many benefits over on-premise access, but also over other products with cloud access, due to platform technology developed with simulation users in mind.

Increased efficiency due to the ability to adapt to changing needs by scaling up or down the computing power with varying number of machines of instances or simulation templates for engineering test or training scenarios.

A secure user access control that allows the administrator to add & delete users or edit privileges as needed.

Simplified IT overhead since the product on pure on-demand cloud machines via a secure URL, new versions available as soon as they are released.

Seamless Collaboration by splitting the content from the product allowing the content, such as simulation models, to be managed easily with file history log in a central repository.

Flexible Usage and Pricing with a pure SaaS business model based on hourly usage.

Simplified Operator Training Simulators (OTS) have been available in the marketplace for a long time. However in the last six years AVEVA has introduced ground breaking software which combined with the broader availability of low-priced, high power computing platforms creates a new benchmark for performance and rigor. No longer do Training Simulators belong primarily in the realm of the airline, nuclear power and aerospace industries. AVEVA solutions are cost-effective and are being widely adopted by "Tier 1" customers in the Oil and Gas, Hydrocarbon Processing and Power Industries.

Today using Operator Training Solutions an operator can receive plant specific training and learn how to perform a full startup and shutdown of a plant or facility and how to follow emergency procedures in a completely risk free environment. Mistakes can be made and lessons learned without risking personnel or assets. Unique in the industry, an AVEVA simulator is subject to the same hydraulic, heat transfer, and equipment constraints seen in the actual plant and will respond directly to the actual or proposed control configuration in real time or even many times faster than real time. This allows an operator to perform a full start-up hundreds of times even before turning the first switch in the plant.

A New Leader in the Field (and the Control Room)

In the last few years, AVEVA has become the Tier 1 OTS supplier to the Process and Power Industries, as well as the fastest growing OTS provider, leading the market with its DYNSIM® Dynamic Simulation software. OTS systems have been used worldwide on large-scale projects for

thoroughly checking control system configurations before they are applied to the actual plant and for operations personnel training. To date, AVEVA has delivered over 300 OTS systems around the world. These solutions provide a modern alternative to dated and fragmented offerings to enable true Operational Excellence.

To further demonstrate its leadership position, AVEVA has taken Operator Training Simulators one step further by providing simulation training in a 3D environment. Virtual reality is a rapidly growing technology that utilizes the increased power of computers to simulate real or imaginary environments and situations with a high degree of realism and interactivity. AVEVA has now integrated 3D Virtual Reality into our Operator Training Simulator solution to create a system that can replicate not just the control room but the entire plant – both sight and sound.

Section Title

This is particularly useful when companies need to train field operators working in hazardous or mission critical locations. This type of advanced simulation also enables training and operations practices to be enforced, standardized and proliferated, from employee to employee, and it maintains consistency by shift, by plant or by site. Comprehensive 3D simulation solutions link control room operators to field and maintenance operators by means of a high-fidelity process simulation and a 3D virtual walkthrough plant environment. As a result, plant crew training improves safety by enabling operators to perform tasks in a simulated environment, react quickly and correctly, facilitate reactions in high-stress conditions, and instill standards for team training and communications.

Awards and Honors

DOW CORNING	PRODUCT of the YEAR Finalist 2009	CONTROL	Processing Breakthrough 2009
Dow Corning 2007 Excellence Award: SimSci Operator Training Simulator	Plant Engineering 2009 Product of the Year Finalist: SimSci Immersive Training Solution	Control Magazine 2011 Reader's Choice Award for the #1 Simulation Software Vendor: SimSci	Processing 2009 Breakthrough Product: SimSci Immersive Training Solution

Value and Benefits

Operator Training Simulators (OTS) provide plant field and control room operators, maintenance and HSE personnel efficient knowledge transfer and skill development in a matter of months rather than years.

With an OTS, operators are able to improve overall skills and performance by experiencing plant "issues" and "problems" in a simulated or even a virtual reality digital environment. This approach improves operator responses that can:

- Reduce the number of abnormal situations and unplanned shutdowns
- Lower the risk of loss of life, assets, production and/or environmental releases
- Increase operator awareness, skills and readiness

These systems help ensure faster start-up times, quicker recovery from process upsets with less equipment stresses, and the ability to correct procedure errors prior to on-line production.

In addition, operator training and plant performance improvements reduce capital investment costs, increase process yields and enhance management decisions while leveraging existing technology investments.

An investment in an OTS can save hundreds of thousands of dollars or more with paybacks measured in a matter of weeks or months.

Learn More

Operator Training Simulators:
https://sw.aveva.com/engineer-procure-construct/simulation-and-training

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