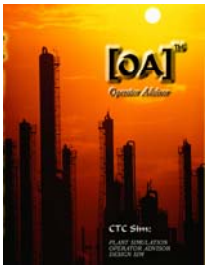
[OA]™ Operator Advisor

Overview - CTC Sim with Operator Advisor

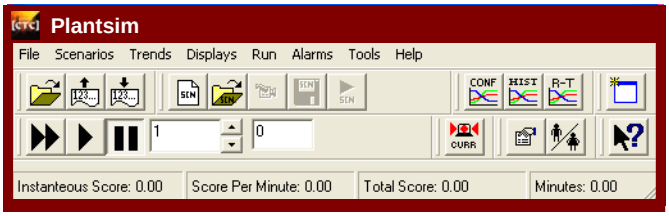
CTC-Sim is a complete plant simulation package that includes: **Plant Sim**, an off-line training simulator; **Design Sim**, a powerful database and tool set for building simulations and an **Operator Advisor [OA]**, which assist operators in making operating decisions. [OA], using newly patented technology, offers simulation speeds of 50-100 times faster than real time! With such fast simulation speeds, the operator can check the consequences of any potential changes in real-time. The software's "What If" function allows for safe experimentation and training on the process, using live data. [OA] can easily be integrated into DCS systems. In the off-line version of the simulator and the background mode for the on-line system, you can run scenarios and keep score!

Features

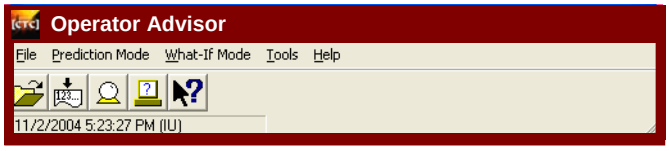
Offline Training Simulator

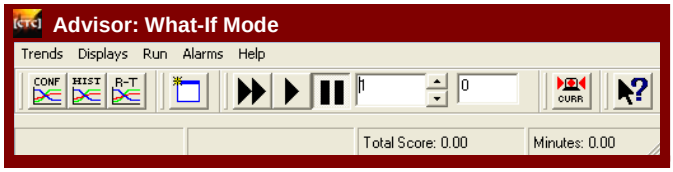


Amazing speeds. New patented technology, developed by CTC, allows the simulator to run at speeds unavailable until now, typically 100 to 150 times faster than real-time. Existing simulators often run at 2 or 3 times faster than real time.



Valve and Instrument Failures. Valves and transmitters are explicitly modeled, allowing an instructor to introduce failures in these components. Typical failures available include valve hysteresis, stuck valves, measurement de lays, noise, and instrument bias.





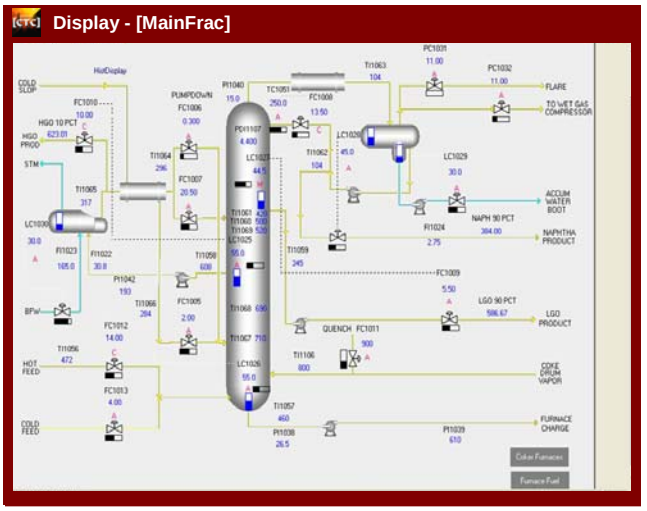
Compatible with DCS consoles. CTC-SIM can be used on a Microsoft Windows based PC alone or may be connected to a DCS console for the operators to train. Communication with the console uses the OPC standard so that the simulator may be attached to virtually any DCS console.

Compatibility with the new [ADMC] Adaptive Multivariable Controller™ and APCX1™

Online Operator Advisor

Background What-If™ Mode. Once the operator has decided to take action, the questions "How much?" and "When?" arise. The What-If mode allows the operator to make the moves based on the current state of the plant and see the results in minutes. Once the operator has determined the appropriate moves, they can be implemented on the actual process.

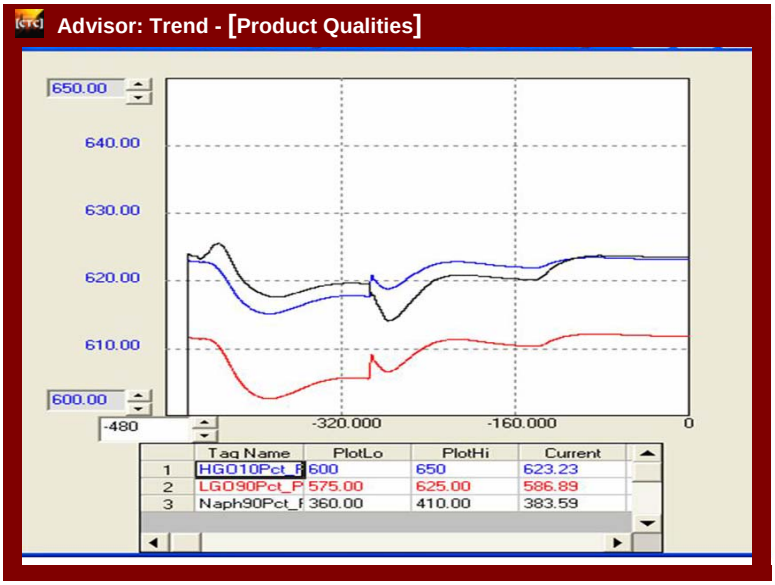
Background Training Mode. The off-line training capability is also present with the on-line advisor. Scenarios and grading of performance, based on previous data bases, are available. The real-time monitoring and prediction of the future continues.



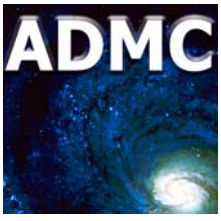
Benefit of OA™

In plants where advanced control has been successfully applied, the operators seldom have an opportunity to run the unit. This leads to the general decay of the operator's skill in running the plants. Unfortunately, the time when the operators are called upon to run the unit is when conditions are at their worst. By using the offline training simulator as well as the online operator advisor, the operators will be able to maintain their skill at higher levels as well as make the correct moves on the unit when it is necessary. The following benefits may then be realized:

- Improved Process Safety
- Improved Product Quality
- Reduced Unit Downtime
- Higher Stream Factor for Multivariable Controls Improve Profitability



OPERATOR ADVISOR PREDICTION OF QUALITY CHANGES, DUE TO FEED CHANGE, WITH CORRECTIONS ALONG PATH TO BRING BACK TO SPECIFICATION



Cutler Technology is launching a new marketing campaign to offer current users of MPC Controllers a field proven superior product that can use their existing models. Users can now take their existing models and configure them directly into APCX1. A typical MPC model requires just a few days to configure into APCX1. CTC's APCX1 Web Server Edition is up to 10 times faster than previous MPC's and includes a Data Historian output feature that exports data to most "process watch" software packages.
APCX1 is actually an operating mode of the ADMC controller. Clients have the option to change the mode of the APCX1 controller to Adaptive DMC by upgrading their model in the future. APCX1 has a choice of 3 operating modes. The first is APCX1 mode, the second is Hybrid Model Mode (a combination of a MPC type model and an ADMC model) and the third is a pure PV Model or ADMC mode.
The APCX1 mode of the ADMC Controller is Dr. Cutler's perfected MPC Algorithm. Since the 1980's, he has been tweaking the Model Predictive Control algorithm and this is the first major overhaul in years. MPC controllers are reported to have a market penetration of over 50% worldwide. Most of these controllers are running on a 1990's era MPC algorithm. APCX1 is a complete re-write of Cutler's original MPC Algorithm using modern compilers and software technology. The APCX1 engine is field proven and is currently running on major process units around the world. www.cutler-tech.com

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V 8.0