

Industrial^{IT} Training Simulator

Providing optimized and enhanced safe operation through all phases of a plant lifecycle



Modern industry of most all kinds involve risks to people, the environment and the installation itself. Most accidents are related to human errors. Well trained operators are able to reduce the risks and the number of shutdowns.

Trained operators also reduce the time for restart after shutdowns and increase product quality. This is good economy.

By using an Industrial^{IT} training simulator solution your operators can learn to master the process and all likely or unlikely situations in a safe, realistic operator environment.

Industrial^{IT} Training Simulator

Industrial Training Simulator is an enhancement to the Industrial^{IT} Control system offering, allowing transparent implementation of the plant controls into a stimulated operator training simulator environment.

Focusing on realistic behavior and cost effectiveness, the ITS offers a series of benefits.

For process control, the ITS offers ControlIT SoftController for execution of the control application.

The SoftController concept allows the full plant control application, residing in numerous process controllers, to be transferred directly to a Windows 2000 PC environment for execution in the simulator.

Identical SW gives identical behavior.

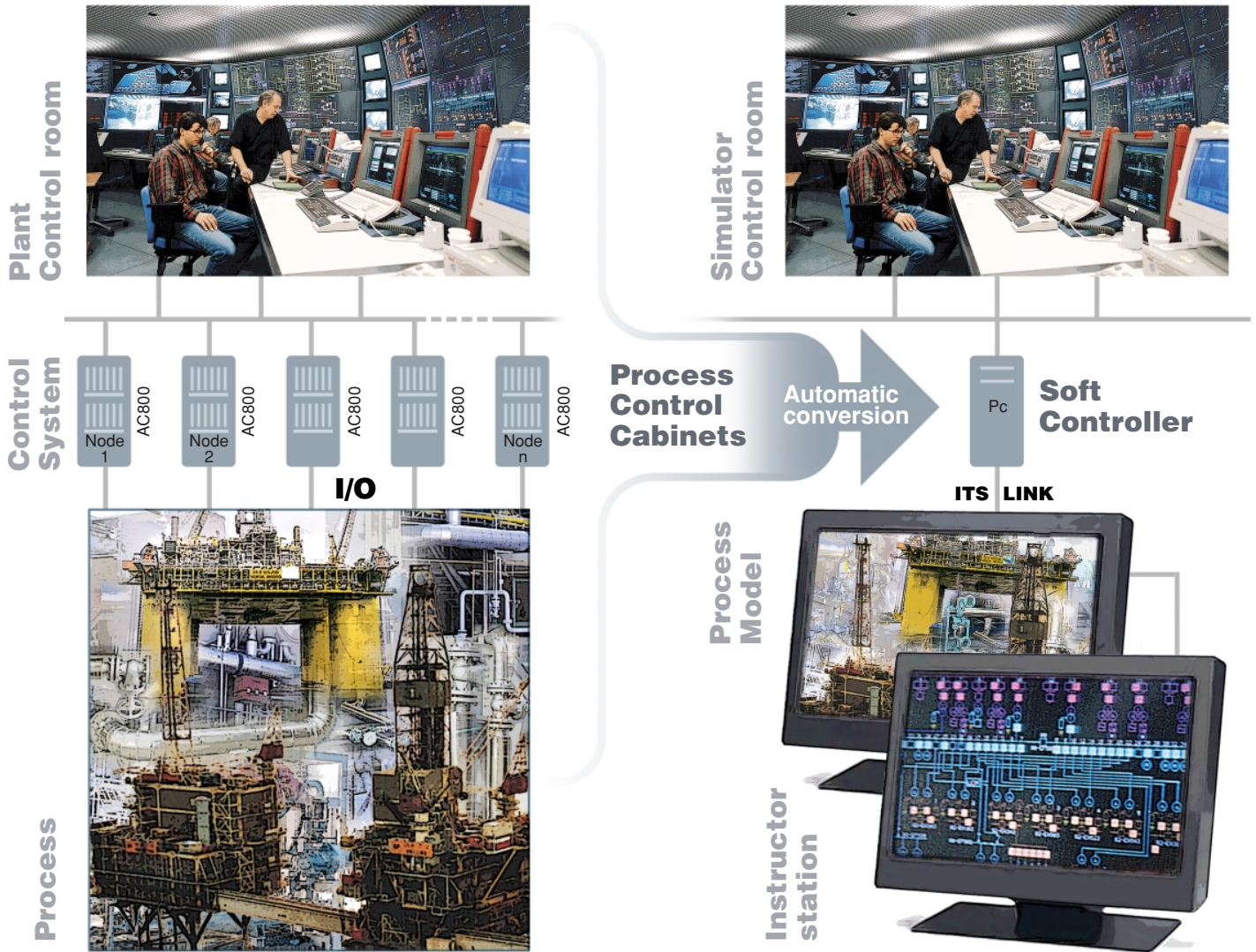
The Operate^{IT} operator interface is copied directly from the plant operator stations with no changes.

The physical I/O in the plant control system will be replaced by SW signals being stimulated by a dynamic process model via ITS Link.

A large number of process model vendors have been interfaced. On the Industrial^{IT} platform, the interface between ITS and the process model is based on OPC.

In total, the ITS offers a cost effective solution that guarantees consistency between plant controls and simulator controls. All within a minimal HW architecture.

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The ABB Group serves customers in power transmission and distribution; automation; oil, gas, and petrochemicals; building technologies; and in financial services. With novel IT applications, tailored software solutions, growing eBusiness and a fast-expanding knowledge and service base, ABB is building links to the new economy. The ABB Group employs about 160,000 people in more than 100 countries.



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Benefits

- Cost and space efficient simulator platform
- Standard ABB products
- Technology platform identical to plant control system
- Ensures consistency and efficiency through
 - Automated generation of simulator control code from plant controls.
 - Automated re-generation after plant modifications.
- Realistic and efficient training of process operator and system engineers
- Supports Life Cycle Simulator strategy
 - Design Studies
 - Control system design verification
 - Operator Training
 - Modification and optimization studies
- Ensures investment protection
 - Easy to upgrade and easy to maintain
 - Easily expandable

Oil & Gas references

- Elf - Elgin Franklin
- Esso - Balder
- PPCon - Ekofisk II
- Statoil - Gullfaks A,B & C
- Shell - Draugen
- Statoil - Sleipner
- Norsk Hydro - Grane
- Statoil - Kollsnes/Troll A
- Statoil - Tjeldbergodden
- Elf - Frigg

Simulator functions

- Transfer I/O between controllers and simulator model
- Simulation of loop or instrument fail for analog and safeguard inputs
- Bumpless Freeze and Resume of simulation
- Save and restore initial conditions (ICs)
- Save and restore Snapshots (cyclic as well as ordered by instructor)
- Recreate alarm lists when restoring snapshots/ICs
- Time synchronization between simulator model and control system
- Configurable switch check function

Process Model Vendor Interfaces

- ABB Simcon
- Fantoft Process
- Norcontrol
- KSIM
- Kärnkraftsäkerhet och Utbildning (KSU)
- Eurosim
- S3
- GSE
- SAST
- AspenTech
- Kamyrr
- Exelon Corp.