HONEYWELL FORGE

PROCESS TRAINING SIMULATOR

PRODUCT INFORMATION NOTE

Honeywell Forge Process Training Simulator is part of the comprehensive Honeywell Forge Workforce Competency suite, which helps better train today's industrial workforce. This solution can be used to replicate and assess the operational readiness of plant assets long before they are applied in real-world production scenarios.

The Challenge: Reliable and Optimized Production

Process industry plants are faced with finding a balance between contrasting objectives – improving production capacity while maintaining reliability. What good is improving production capacity by 2-5% if pushing equipment harder results in shutdowns, equipment damage or personal injury? Solutions that assist an operator's understanding and control of current plant operating conditions have obvious advantages.

The Opportunity: Preparing Assets for Operation

Fast-paced operating scenarios leave little time to make the right decisions. As incidents remain unchecked, damage can quickly escalate. Production teams rely on procedures, controls and operators to maintain reliable and optimal plant operations through informed decision-making. These assets must be methodically prepared for production prior to initial plant startup, with training periodically revisited thereafter to reassess performance in lieu of operational experience.

The Solution: Honeywell Forge Process Training Simulator

Honeywell Forge Process Training Simulator is dedicated to helping industrial personnel replicate and assess the operational readiness of plant assets long before they are applied in real-world production scenarios.

Honeywell Forge Process Training Simulator is part of the Honeywell Forge Workforce Competency suite, which includes robust solutions to better train the industrial workforce for safe, incident free and efficient startups and operations. In addition to Honeywell Forge Process Training Simulator, the suite includes: Honeywell Forge Curriculum (customizable competency model) and Honeywell Forge Tutor (powerful knowledge capture and propagation tool).



Process industry plants are faced with improving production capacity while maintaining reliability

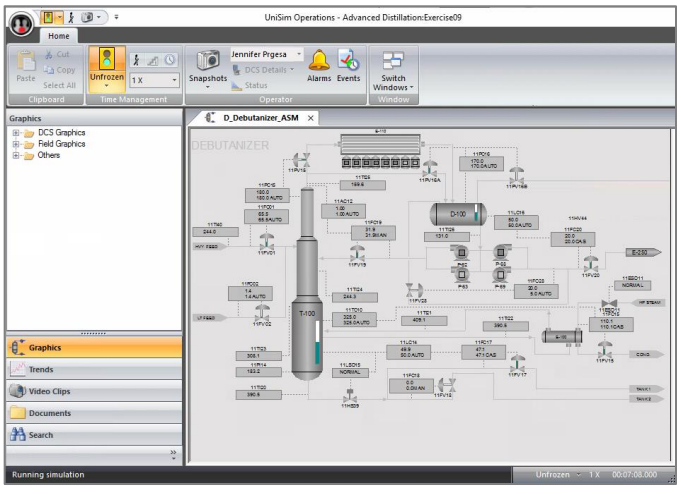
Honeywell Forge Process Simulator includes:

- Training Software
- Control Simulation
- DCS Interfaces/Toolkits
- Process Monitor

Honeywell Forge Process Simulator is built on proven technology; Honeywell has more than 30 years' experience supplying simulation tools to the process industries. It forms the foundation of a comprehensive training program that is used to prepare operators for production scenarios before initial operations and in refresher training. Honeywell Forge Process Simulator also provides an intuitive and interactive process and control modeling solution that enables engineers to develop and optimize operating procedures and control system configurations.

The key features of Honeywell Forge Process Simulator include:

Unique simulation technology: Based on the detailed definition of a plant as represented by Piping and Instrumentation Diagrams (P&IDs) and equipment datasheets, Honeywell simulators are real-time dynamic models that typically incorporate the entire control content. Exceptionally high levels of fidelity and performance characterize their underlying technology. The simulation models may be of unrestricted size and can be adapted for detailed engineering studies or real-time applications such as operator training.



Honeywell Forge Training Simulator provides a dynamic plant simulation system as the foundation of a comprehensive training program.

Honeywell simulators use best-in-class dynamic simulation for high fidelity process modeling.

First principles engineering and thermodynamic relationships are used to accurately represent plant behavior. These capabilities have been applied extensively and proven repeatedly in live plant applications. When appropriate, customized modeling capabilities are incorporated with the simulators in order to derive maximum benefit for customers.

Extensive Control System Tools: In many cases, significant added value is derived from the simulator by integrating the model with appropriate Distributed Control System (DCS) facilities. This is especially important for operator training and pre-commissioning validation work.

As an experienced solution provider, Honeywell offers solutions for a wide range of third-party control and safety systems, and equipment controllers. Our recent experience encompasses: ABB, CCC Series V, Emerson, General Electric, HIMA, ICS Triplex, Invensys, Modicon, Rockwell, Siemens, Westinghouse, Yamatake and Yokogawa.

Comprehensive training features: For operator training and competency management applications, the Instructor Station offers fully featured facilities for all aspects of session management. Key tasks include basic coursework, problem solving, and trainee assessment. Effective management of these tasks is achieved through a graphical user interface (GUI) with facilities for:

- Welcome screen, operator guides and support
- Basic user features, including snapshots, initial conditions, backtracks, time management (freeze, step, fast time) and feature navigation bar
- Advanced Instructor tools for exercises, scenarios, upsets, instructor variables, performance monitoring and assessment, and alarm and event summary
- Centralized Simulation Server providing a repository for downloadable models, performance reporting and license management
- Operator tools such as graphic displays with faceplates, remote functions, operator trends, alarm display and annunciator, document library, video player and event-driven help.
- Seamless Integration with immersive experiences providing new training solutions for field operators.

Integration with Experion PKS

The simulator is qualified with other key Honeywell Experion® PKS components, including: Honeywell Forge Process Simulator includes:

- Experion PKS Control Execution Environment (CEE) comprised of the Experion Station, Experion Server, SimC300, SimACE and FFD SimFIM IO
- Honeywell Forge Advanced Process Control (Honeywell's solution that dynamically drives the process to peak performance)
- Honeywell Forge Enterprise Data Management plant historian

Typical Applications

Honeywell simulators are supplied for an increasingly diverse range of process plant applications found in Refining, Petrochemicals, Chemicals, Oil & Gas, Pulp & Paper, Plastics, Power, and Mining/Minerals/Metallurgy.

Typical applications for this technology include:

Comprehensive training and competency management programs:

Benefits from comprehensive operator training programs are well known. Immediate benefits are realized through preparation of the operator for an effective startup. Ongoing benefits are realized under normal operating conditions where the focus shifts to maintaining production by recognizing and avoiding incidents that result in production losses, equipment damage, personnel injury, and environmental hazard. Additional training objectives can be defined for experienced operators interested in training on advanced process control and plant/mill information systems.

Integration with Experion PKS

Honeywell Forge Process Training Simulator enables sustained and measurable upgrades in plant reliability and operating performance, and can be used by both operations and engineering teams for a multitude of purposes throughout a plant's lifecycle. Boosting plant reliability through informed decision-making is critical to success. When this is achieved, plant managers can:

- Accelerate knowledge transfer to operators
- Deliver earlier operating profits with faster startups
- Protect profits through incident avoidance
- Safeguard plant assets and the environment

In short, Honeywell Forge Process Training Simulator yields substantial financial returns and becomes an indispensable part of a company's plant technology infrastructure. Typical applications for this technology include:

Procedure development and assessment:

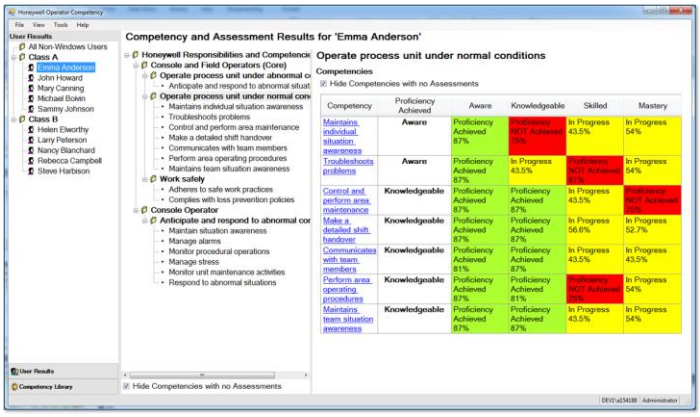
Plants can build confidence and realize huge benefits by verifying and validating normal and abnormal procedures using the simulator months before actual start-up. Checking the procedures and preparing operations staff at the same time is a very efficient process.

Control strategy assessment:

The first time a plant is operated, its controls do not have to be in actual startup. With dynamic simulation, users can tune controllers and confirm interlocks and safety systems before physical commissioning. This validation provides an opportunity for issues to be resolved early.

Benefits to Customers

Honeywell Forge Process Training Simulator offers an unrivaled range of capabilities and is field-proven at sites worldwide. It provides the foundation for a sustained competitive advantage. The simulator also is the key to a robust understanding of plant behavior under normal and abnormal situations. Benefits extend beyond enhanced operating performance to include improved safety and protection of the environment.



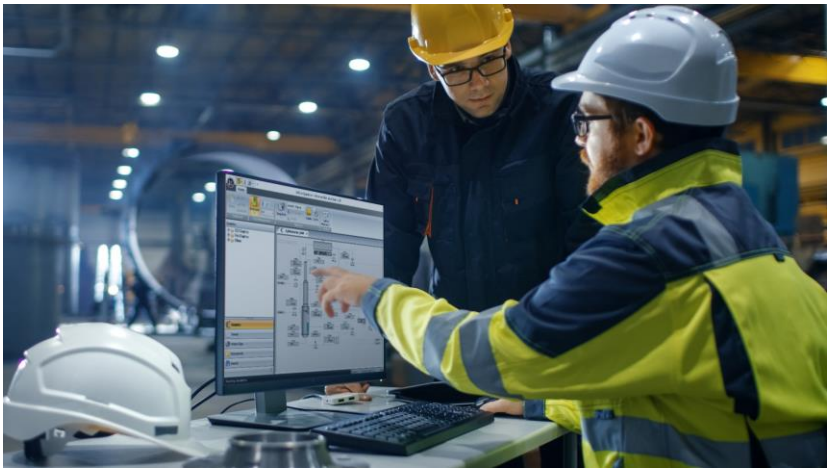
Honeywell Forge Process Training Simulator consolidates an entire lifetime of experience into a concise process training curriculum.

Why Honeywell?

Honeywell provides a comprehensive range of services for the supply of simulators including: project management, cost control, planning, purchasing of associated computer platforms and DCS consoles, model-building, acceptance testing, training courses, documentation and operational support. Staffed by specialists in process engineering, control systems integration and project management, Honeywell teams have expertise in all key areas, with over 100 professionals locally in Europe, North America and Asia. Our teams also have the advantage of leveraging specialized resources within Honeywell, adding flexibility and providing best-in-class service to our customers.

Support Services

Honeywell Forge Process Training Simulator comes with worldwide, premium support services through Honeywell's Benefits Guardianship Program (BGP). BGP is designed to help our customers improve and extend the usage of their software and the benefits they deliver, ultimately maintaining and safeguarding their software investment.



Honeywell Forge Process Training Simulator enables sustained and measurable upgrades in plant reliability and operating performance.

For More Information

Learn more about how Honeywell Forge Process Training Simulator can improve your operational performance and plant safety visit Honeywell Forge Workforce Competency or contact your Honeywell Account Manager, Distributor or System Integrator.

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