

HONEYWELL CONNECTED WORKFORCE COMPETENCY

Honeywell Connected Workforce Competency is a cloud-deployed, simulation-based scalable offering that provides comprehensive process training for operations personnel. With Honeywell Connected Workforce Competency, trainees gain both knowledge and experience to execute analysis and decision-making tasks while being mentored anywhere and anytime.

THE CHALLENGE: CONSTRAINED TRAINING SOLUTIONS

The impact of COVID-19 pandemic combined with the drive to increase effectiveness of workforce training solutions, presented a new set of challenges for process industries including:

- Continuous access to training
- Training features becoming obsolete
- Collect and consolidate disparate training data
- Cost effective way of providing training at scale

THE OPPORTUNITY: LEVERAGING CLOUD CAPABILITIES

Challenges of access to operations training can be addressed through cloud technologies due to its inherent ability to easily provide remote access at scale. With remote access, trainees and trainers can collaborate and complete their tasks, that in the past they would have exercised in same room, without timing and location constraints.

THE SOLUTION: HONEYWELL CONNECTED WORKFORCE COMPETENCY

Connected Workforce Competency is dedicated to help customers take their training to next level by unlocking more benefits:

- Accessibility: Scalable concurrent user access to multiple sessions, anywhere anytime
- Reduced Total Cost of Ownership: Reduce capital expense as well as on going infrastructure and operational expense through cloud deployment
- Viability: Ease of updates for relevant content
- Visibility: Ability to access enterprise-wide competency KPIs to make accurate assessments and plans
- Seamless Collaboration: Easily join a session in progress, start and track training for a cohort
- Simple Interface: Convenient HTML based interface removing the need for a niche skill to assign lessons or add complementary documentation for the training
- Ease of Maintenance: Our cloud solution allows customers access to Honeywell experts, enable evergreen support and maintenance
- Targeted and Timely: specific training interventions develop critical knowledge and experience at the right time
- Designed For Security: Adheres to the latest cyber security standards to align with your corporations' infrastructure



Process industry plants are faced with improving production capacity through more efficient operations training.

SIMULATION-BASED TRAINING ANYTIME, ANYWHERE

Replicating fast-paced operating scenarios in a simulation environment is the best method for preparing operations personnel to be competent and informed decisions makers during high-risk infrequent activities such as start-up, shutdown, and process upsets. Connected Workforce Competency provides for contextual launch of simulation-based learning through high-fidelity simulation training scenarios, experiences, and evaluations along with training content. Cloud-based deployment delivers this superior capability directly to a trainee's desktop, anytime, anywhere, without a need to invest in or support on premise training program infrastructure. Furthermore, it enables trainers to mentor and assess trainees remotely.

Connected Workforce Competency 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.

Key features of Connected Workforce Competency:

- **Cloud Hosted:** Deployed in Honeywell's instance Microsoft Azure cloud infrastructure which enables simulation-based learning and instructor capabilities delivered to desktop anytime and anywhere.
- **Scalable:** Virtualized cloud infrastructure can scale up and down as required from one or more concurrent local users to global enterprise-wide access.
- **Trusted Simulation Technology:** First principles models 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 models can be built in the simulators based on the definition of a plant as represented by Piping and Instrumentation Diagrams (P&IDs) and equipment datasheets. Honeywell simulations are cutting-edge dynamic models with high fidelity and performance

Typical Applications

- Honeywell Workforce Competency has been supplied for an increasingly diverse range of verticals in Refining, Petrochemicals, Chemicals, Oil & Gas, Pulp & Paper, Plastics, Power, and Mining / Minerals / Metallurgy.*

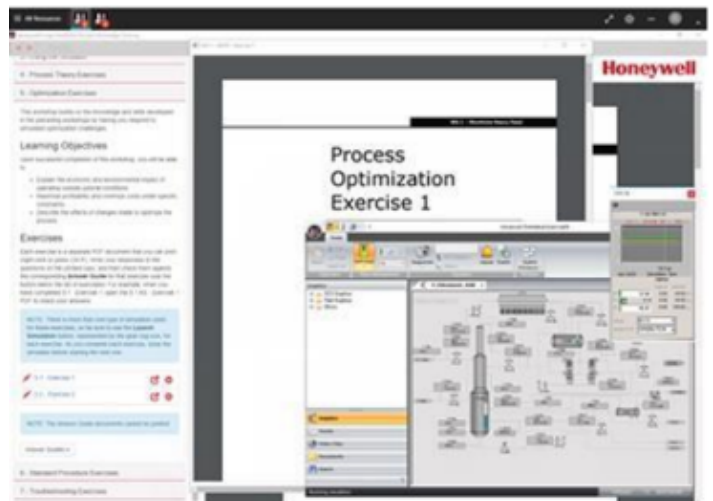
*Based on previous deployments for on-premises Workforce Competency solution, prior to development of Connected Workforce Competency.

COMPREHENSIVE TRAINING AND READY NOW FEATURES

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.

For operations training and competency management applications, Connected Workforce Competency ready-now offerings include basic coursework, problem solving and trainee assessment. Effective management of these tasks is achieved through a graphical user interface (GUI) with facilities for:

- **Basic User Features:** Snapshots, initial conditions, backtracks, time management (freeze, step, fast time) and feature navigation bar.
- **Centralized Simulation Server:** Provides a repository for managing downloadable models, performance reporting and license management.
- **Training Tools:** Such as graphic displays with faceplates, remote functions, operator trends, alarm display and annunciator, document library, video player and event-driven help.
- **Advanced Instructor Tools:** To manage exercises, scenarios, upsets, instructor variables, performance monitoring and assessment, and alarm and event summary.



Connected Workforce Competency leverages high-fidelity dynamic simulation as the foundation and provides a comprehensive training program that consolidates an entire lifetime of experience into a concise process training curriculum.

MODELS AND STARTER TRAINING CONTENT

In addition to custom model capability, Connected Workforce Competency offers the following ready-now high-fidelity process models with starter training content:

- **UOP Process Models:** UOP Unicracking™ Process for Hydrocracking, UOP Platforming™ and CycleMax™ Continuous Catalyst Regeneration, UOP Fluid Catalytic Cracking, UOP Oleflex™ Reactor and Product Recovery
- **Non-UOP Refining Models:** Advanced Distillation, Crude/ Vacuum Distillation Unit, Delayed Coker Unit, Naphtha Stabilizer and Splitter Unit, Naphtha Hydrotreater Unit, Diesel Hydrotreating Unit, Sulphur Recovery & Tail Gas Treating, Naphtha Isomerization, Catalytic Reformer, Amine Treatment, LPG Merox Unit Recovery
- **Starter Training Content:** Training content for ready-now options addresses information and experiences critical to profitable daily operations which can serve as a curriculum kick-start. Training content includes:
 - **Process Familiarization:** From cause and effect to fundamentals necessary for operations and troubleshooting.
 - **Control and Safety System Operation:** Provides an understanding of the operation and interactions of the control and safety system.
 - **Start-Up and Shutdown:** Simulation-based learning is one of the best methods to teach infrequent and high consequence procedures such as unit start-up and shutdown.
 - **Normal Operations:** Normal operating procedures are also included, as effective day- to-day operation of the unit is a key contributor to process safety, reliability and performance.
 - **Optimization:** Optimization exercises provide the trainee with the experience of executing typical daily operating instructions, while maintaining important constraints within their safe operations range.
 - **Abnormal Situations:** Numerous equipment failures and process conditions variations support training scenarios associated with identifying and responding to abnormal situations.

BENEFITS TO CUSTOMERS

Connected Workforce Competency enables sustained and measurable upgrades in plant reliability and operating performance and can be used by both operations and engineering team to:

- Reduce operating cost by reduction of incidents caused by human errors
- Improve operations performance by providing training and validating procedures that help protect people, plant assets, and the environment
- Institutionalize knowledge capture and dissemination; repurpose staff to operate new equipment and processes
 - Accelerate the process of propagating, assessing diagnostic and skills, and developing relevant process know-how
 - Monitor the level of attainment of operators at individual, shift, or site levels
- In short, Connected Workforce Competency yields substantial financial returns* and becomes an indispensable part of a company's plant technology infrastructure.

SUPPORT SERVICES

Honeywell Connected Workforce Competency comes with worldwide professional support services built in to help our customers improve and extend their usage of our cloud offerings and the benefits they deliver.



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WHY HONEYWELL?

Honeywell provides a comprehensive range of services for the supply of experiential training tools including:

- Project management
- Cost control
- Planning
- Purchasing of associated computer platforms and DCS consoles
- Model building
- Acceptance testing
- Training courses
- Documentation
- 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 located in Europe, North America and Asia. Our teams also have the advantage of leveraging specialized resources within Honeywell, adding flexibility, and providing high-quality service to our customers.

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For more information

To learn more about Honeywell Connected Workforce Competency visit [HoneywellForge.ai](#) or contact your Honeywell account manager, distributor or system integrator.

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