OTS Through the Cloud at Linde
Case Study

Linde used the Honeywell UniSim Operation solution to roll out sophisticated simulator-based training for its Remote Operating Centers controlling gas plants across the globe.

Background
Linde is one of the leading industrial gases and engineering companies in the world. Offering a wide portfolio of gases, equipment, solutions and services for applications across most industries, it operates more than 1,300 gas production plants globally. Over 500 of these are large-scale plants, both hydrogen plants and air separation units.

To help them run safely, more efficiently and productively, operation of Linde’s plants has been consolidated into a small number of Remote Operating Centers (ROC), in locations such as Leuna in Germany, Stewartsville, New Jersey, in the United States, and Shanghai in China each provide shared operations, a technical center of excellence and central control for plants across their regions.

Challenge
Operators in each ROC oversee control of dozens of plants across different countries. This is enabled through a degree of automation that requires little manual input during normal operation. In this diverse operating environment, a high level of operator competence is essential to ensure safe and smooth control for start-ups or process upsets. Hand-over of control for new plants from local operation to the ROC must also be carefully managed.

With such events occurring rarely, opportunities for training and preparing ROC operators were limited. Moreover, there is significant risk of causing downtime when training on the real system.

Solution
With support from Honeywell, Linde engineers designed and implemented a setup to provide a training solution across its Remote Operating Centers based on simulator-based training.

Dynamic models of complex industrial processes combined with real-world operator interfaces, allow OTS trainees to quickly develop confidence, competency and experience dealing with both normal and abnormal situations – without risk to the operation.

Linde selected UniSim Operations, part of Honeywell’s UniSim Competency Suite portfolio of competency management tools, to implement an on-premise cloud based centrally-managed operator training simulation (OTS) platform for all ROCs. Operators worldwide can access OTS training for typical plant configurations from their workstations. Several hydrogen plants, as well as an air separation plant application, are available through the solution.
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Jan Heinrich, HyCO Operations Manager, Linde Gas

The OTS architecture is based on Honeywell’s market-leading UniSim Design process simulation software and UniSim Operations training solution implemented on centrally managed virtual machines. In this case the DCS is an emulation of Siemens PCS7 including engineering and operator stations linked to UniSim Operations using the SIMIT adaptor.

Benefits

Honeywell’s UniSim software has allowed Linde to rapidly roll out consistent, high quality OTS training across its ROCs worldwide.

Operators have easy access to training using original plant HMI and control strategies, wherever and whenever they need it.

With centralized training Linde can ensure a consistent curriculum and can benchmark between sites. Using several OTS applications representing typical plants allows it to provide high quality simulator-based training while sharing costs across a large user base.

With the ability to order duplicate hardware and licenses, the system is easily and cost-effectively scalable, to deal with expansions in staff or even new ROCs. Linde is also able to offer training externally to Linde Engineering customers running their own plants.

Florian Hang, HyCO Global Operations said: "Our global Operator Training Platform allows us to provide consistent training across the organization while at the same it is saving OTS maintenance and license cost”.

Jan Heinrich, HyCO Operations Manager, Linde Gas added: “The OTS enabled us to train operators in our Remote Operation Centre in Germany, even before the plant in Finland finished commissioning. This resulted in a very smooth handover of the operations of the plant from commissioning to normal remote operation phase.

About Honeywell’s UniSim Competency Suite.

UniSim Competency Suite is Honeywell’s simulator-based learning and development software solution, helping operators develop skills, gain knowledge and experience, and develop critical behaviors to boost the ability to operate process plants safely and efficiently.

Using the sophisticated mathematical models of the plant process equipment, process controls and operator interfaces of UniSim Competency Suite, deployment using on or off premise cloud architectures brings the OTS experience to the desktop, wherever your operators are.

For More Information

Learn more about how Honeywell’s UniSim solutions can improve operator competency and plant performance visit www.honeywellprocess.com or contact your Honeywell Account Manager, Distributor or System Integrator

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