UNISIM® DESIGN
The Ultimate Tool for the Ultimate Engineer
A Life-Cycle Solution

UniSim® Design Suite. Honeywell’s process simulation solution, is the ultimate tool that engineers need to develop, enhance and re-use models throughout a project or plant-asset lifecycle. With an integrated steady-state and dynamics environment and a user-friendly interface, UniSim® Design helps engineers create and optimize plant designs and monitor asset performance, thus enabling stable operations and plant safety.

With comprehensive, first principles thermodynamics and unit operation models, as well as compliance with CAPE-OPEN and ActiveX OLE Automation, UniSim Design combines steady-state and dynamic modelling to boost productivity and profitability across the project life cycle.

Improve Your Process Design
Evaluate the impact of design decisions earlier in the project to reduce risks and optimize operations. Easy-to-use tools allow fast development and revision of process models, equipment rating, and design validation across a broad range of operating conditions. Allowing users the freedom to run “what-if” scenarios and sensitivity analysis before committing expenditure, UniSim Design helps reduce expensive on-site process modifications during commissioning and helps minimize capital costs.

Lower Engineering Costs
From conceptual and detailed design through to rating, operator training, debottlenecking, online optimization, and remote asset monitoring UniSim Design helps create models that can be enhanced and re-used throughout the plant lifecycle. This eliminates errors, manual transfer, visualization and analysis of production and process data that account for up to thirty per cent of engineering time.

Integrating steady-state and dynamic modelling capabilities, UniSim Design delivers more cost-effective performance, improving process engineering productivity and effectiveness.

Enhance Equipment Performance
Equipment performance monitoring allows users to rapidly evaluate whether equipment is performing according to its specifications and design. Engineers can use UniSim Design to quickly identify equipment deficiencies for troubleshooting or to test the impact of design changes for revamps.

First-Principles Simulation
UniSim Design enables users to accurately calculate physical properties, transport properties and phase behavior. It’s validated with process data to give realistic results when modelling distillation, reaction, heat transfer, rotating equipment and logical operations in both steady-state and dynamic environments.

Users benefit from the availability of extensive thermodynamic property databases and the ability to extend them (adding components or custom thermodynamic properties) or tune them (to account for binary interaction parameters, for example). UniSim Design users also benefit from links to specialist third-party thermodynamic databases, such as OLI® Electrolytes, Schlumberger AMSIM, GEOS 2006, Dortmund Data Bank (DDST) and AOHE Design Institute of Physical Properties (DIPPR). Developed with a focus on robustness and ease of use, UniSim modules help users tailor a solution with capabilities to meet their precise requirements. Honeywell also engages in Joint Development Programs with customers to address their specific needs and requirements.

Tailored to Your Operation
ActiveX (OLE Automation) compliance means users can easily program their own interface or integrate their own unit operations, propriety reaction kinetics and specialized property packages from programs such as Microsoft® Excel® and Visual Studio®.

In addition, our open architecture design provides the flexibility to add the industry-specific capabilities your operation needs. Users can choose from a range of optional UniSim Design modules, as well as seamlessly integrating best-in-class third-party solutions for maximum flexibility and to protect existing investments.

The UniSim Design Suite Options
The UniSim Design Suite includes a wide range of modules to boost design accuracy in key areas for specific industries:

• UniSim Spiral Wound Tube Bundle—Accurate dynamic modeling of complex spiral wound tube bundle exchangers for LNG producers.
• UniSim Flare—Design new flare and vent systems, or rate and debottleneck existing flare systems that no longer meet plant safety requirements.
• UniSim PRS—Size the PSV/Relief Flap and surrounding pipes based on calculated/specifications relieving rate using different relief scenarios and generate datasheets and reports, with our Pressure Relief Sizing tool. This tool is capable of Preliminary API Design and Existing PRS Validation.

Extensive Third-Party Support
Open architecture gives users greater flexibility to select best-in-class software and gain maximum value from existing investments in modeling technology. UniSim Design users benefit from smooth integration of a range of calculation and modelling tools, with support for market-leading third-party software as well as solutions from Honeywell’s wider portfolio.

Multiflash® (Infocrom)—used for properties, black oil translation, and as an API engine.
Xchanger Suite® (Dortmund)—for heat exchanger design and rating.
 Georgetown Link® (Cost Engineering)—for cost estimation purposes.
Pipesim® (Schlumberger)—for pipeline simulation.
Amine Option® (Schlumberger)—for amine/measuring process simulation.
FINESYS® Option® (Schlumberger)—for pipeline simulation.

Blackoil Option® (Schlumberger)—for upstream fluid modeling.
COMSOL® (Siemens)—for engineering workflow.
MySEP® (Wang Solutions)—for separators and scrubbers design.
AXSYS® (Bentley)—for engineering workflow.
OLGA® (Schlumberger)—for multi-phase dynamic pipeline simulation.
Dortmund Databank—leading database of ULS data for the process industries.

Honeywell also offers HTRI Xchanger Suite and HTRI XSimOp modules bundled together with the respective UHX modules, as an alternative to HTRI subscription.
Best-in-Class Aftermarket Services
Honeywell’s support engineers have the product and domain expertise to ensure you get the most from your process simulation software. With an average of more than eight years’ experience supporting UniSim Design, and with solid backgrounds in process engineering, they’ll help you get answers faster.

All UniSim Design Suite software comes with our Benefits Guardianship Program, protecting your investment in advanced software applications with a cost-effective path to the latest technology and on-going support. Providing telephone and online support, updates and upgrades, it ensures your software stays refreshed and keeps delivering value.

With our worldwide network we offer a range of other services wherever you are, including standard and custom training courses and full consulting services and studies.

The UniSim Family
The UniSim Design suite is part of the UniSim software family of online and off-line process design, operator training, asset monitoring, and optimization applications.

Giving users the power to determine process workflows, equipment needs and implementation requirements, UniSim solutions help you capture and share process knowledge, improve plant profitability and maximize returns on investments in simulation technology.

Speak to us about the UniSim range:
- Honeywell UniSim Competency Suite to plan, deploy and manage a structured program for operator competency.
- UniSim Optimization Suite to integrate Profit Suite, Honeywell’s comprehensive advanced control and optimization technology, with UniSim Design models for APC design and pre-tuning.
- UniSim Engineering Studies to help customers optimize equipment design, controls, and operation before making capital investments.

For More Information
To learn more about Honeywell’s UniSim Design engineering workflow software, visit www.hwll.co/UniSim or contact your Honeywell account manager.

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