UniSim® ProSim Bridge
Solution Note

UniSim ProSim Bridge provides Honeywell control, automation and safety system simulation and connectivity for 3rd party Operator Training Simulators.

The UniSim ProSim Bridge solution provides fully supported connectivity and simulation solution for deploying a Honeywell Experion PKS or TPS console operator training simulation system. The solution is based on Honeywell’s own Operator Competency Management technology, leveraging over 25 years of Operator Training Simulator (OTS) development and deployment experience.

Honeywell’s UniSim ProSim Bridge is a collection of off-the-shelf software components that are integrated with Experion PKS and/or TPS simulation software and hardware to provide a comprehensive, credible and realistic console operator training solution.

Robust Mature Technology
OTS vendors who need to deploy a fully supported Honeywell Experion PKS and/or TPS operator training solution can interface their training environment to the Honeywell DCS simulation system using UniSim ProSim Bridge. UniSim ProSim Bridge technology provides soft controller connectivity and stimulation of Experion C200, C300, and Application Control Execution (ACE) simulation environments and direct simulation of the HPM, Fail Safe Controller (FSC) and Experion Safety Manager.

The ProSim Bridge is based on the very same Honeywell control system simulation, toolkits and connectivity technology as used by Honeywell’s UniSim Competency Suite OTS execution teams. UniSim ProSim Bridge supports Honeywell DCS system integration via the TPS Local Control Network (LCN) and/or the Experion Fault Tolerant Ethernet (FTE).

Figure 1: Credible and Realistic High Fidelity Training Experience using the Real-World Operating Console.

Full training feature support, includes Freeze, Unfreeze, Initial conditions, Backtracks, Snapshot Save and Restore.

Deploy the latest Experion and LCN system software capabilities for your OTS system.

Unique, proprietary and field proven connection via an API and Software Developers Toolkit for OTS vendor technology integration.

Collaborative deployment model provides full support from Honeywell experts for integration and validation services.

FEATURES & BENEFITS

- Aligned with latest Honeywell control system software and hardware releases
- Simulation support for CX00, ACE, SCADA, Fieldbus and LCN based controls
- Accurate simulation of real-world control and safety systems
- Safety system simulation for both FSC and Safety Manager
- Interfaces and toolkits validated and used regularly by Honeywell
- Credible and realistic console operator trainee user experience and outcomes
- Includes UniSim OTS engineering productivity toolkits
- Virtualization support for all Experion PKS hardware and software components
- Aligned with the Experion Simulation System Software Bundle (EP-OTS001)
- Identical control system simulation technology used by Honeywell UniSim Competency projects worldwide
- Support for training simulation features such as freeze, unfreeze, snapshot save and restore of initial conditions
- Implementation uses the actual control and safety system configuration
- API, Software Development Kit (SDK) and optional testing and validation support provided to OTS vendors
ProSim Bridge Software Components
The ProSim Bridge Software is licensed to the end user. The licensed software components include:

- **UniSim Operations Platform**: An integration software platform for external stimulation of Experion simulated controllers. Includes a software development and testing User Interface. The platform includes simulation capabilities for Experion Safety Manager (SM), Fail Safe Controller (FSC) and the High performance Process Manager (HPM). The ProSim UniSim Operations Platform does not provide a User Interface for run time deployment. The run time User Interface and the training features command and control is via the 3rd party simulation system.

- **UniSim Operations Interface**: Provides the proprietary connection between UniSim Operations Platform and the Honeywell Experion and/or TPS LCN components.

- **UniSim Operations Toolkits**: Productivity tools used to prepare the Honeywell Control and Safety Systems configuration details for use in the UniSim ProSim Bridge application.

- **UniSim Operations ProSim Adaptor**: A lightweight COM based link between UniSim Operations Platform and an external simulation system.

Hardware and Software Requirements
For Experion PKS systems, the ProSim Bridge software is deployed with the Experion OTS system software bundle (EP-OTS001). The Experion OTS software bundle includes all the necessary software licenses for a complete standalone Experion PKS simulation system. The software bundle can optionally be extended to supports integration of TPS LCN devices via the OTS Experion Server and OTS Experion Station TPS enablers.

The Experion OTS software bundle includes a collection of simulation environments for the series C controllers (SIM-CXX), and the ACE (SIM-ACE). The simulation environments are deployed on server class hardware for high fidelity deterministic simulation. The capacity limits for the Simulation Control Environment (SCE) Server is dependent on the number of processors and the mix of SIM-CXX and SIM-ACE environments deployed.

The ProSim Bridge software utilizes Experion PKS base system software communication and interface capabilities and must be installed on an Experion Flex Station. The Flex Station must be reserved exclusively for the ProSim Bridge to ensure high performance of the OTS system interface.

![Figure 2: UniSim ProSim OTS System Integration with Honeywell Experion and TPS Control Systems](image-url)

OTS Vendor Interface Development Support
On behalf of the end user, and within the obligations of a mutual Non-Disclosure Agreement between Honeywell and the OTS vendor, Honeywell will provide a Developer’s Guide which describes the ProSim Bridge interface and a Developer’s toolkit which contains an example of how the interface is used in practice. The OTS vendor developing the interface is responsible for using the ProSim Bridge API to, among other things, launch the simulation, communicate data, and control the simulation time.

Honeywell can also provide development support services to ensure successful application of UniSim ProSim Bridge. These services can include the following:

**Interface Development Consulting Services**: Honeywell can provide consultation services to assist in development of the UniSim ProSim Bridge interface.

**Interface Validation Services**: Honeywell can assist in the creation of the interface test plan and in testing to validate the solution.
UniSim ProSim Bridge FAQ

What is the use case for ProSim Bridge?
The ProSim Bridge is used by OTS vendor simulation solution providers who need an effective, robust and supported means to integrate their training simulation models with Honeywell Experion and/or TPS control system components for the purpose of console Operator Training. ProSim Bridge includes a fully supported, and robust UniSim Operations base software platform, Experion interfaces, 3rd party interface and productivity toolkits for TPS/FSC/SM simulation.

How is the ProSim Bridge Licensed?
ProSim Bridge is licensed to the End User, in conjunction with additional licenses for the Honeywell Control System. The ProSim Bridge is available as a perpetual or term based run-time license.

Does the ProSim Bridge license include maintenance capability?
Yes, the license includes end user maintenance capability for the delivered solution. For full software support and maintenance, including support for latest versions of the Honeywell control and safety systems, Honeywell recommends the Benefit Guardianship Program (BGP) software support and maintenance contract.

Does the ProSim Bridge include the Honeywell DCS console, controller and safety system software licenses?
No, the Honeywell Experion and/or TPS system licenses are not included with ProSim Bridge. The scope of these license are dependent on the requirements for the training simulator control and safety systems, and the operating console. A Honeywell consultant can review your current system against your training simulation system requirements to provide a software license scope for a complete solution. For Experion Systems, Honeywell has a specially priced Experion OTS bundle compatible with both the UniSim ProSim bridge software components and the Honeywell UniSim Operations OTS solution.

Do I need to use Honeywell’s UniSim instructor station and process models?
No, the UniSim training simulation system user interfaces and process models are not part of the ProSim Bridge deployment. The ProSim Bridge is design exclusively as a communications interface between the OTS vendor process models to Honeywell Experion and/or TPS DCS components, with complete command and control of the interface functionality and training features. Native UniSim Training features or process modeling components are not provided with the ProSim Bridge.

What training features are supported by the ProSim Bridge?
The ProSim Bridge provides a large collection of specific training feature commands as standard. The standard features include session control, diagnostic support, freeze and unfreeze, simulation time management functions, snapshot management, data exchange and replay of console operator actions. These standard features are more fully described in the interface development guide.

Are there any restrictions on OTS Vendor Software?
The ProSim Interface is a set of DCOM interfaces that allow an external simulator, running on any DCOM supported operating system, to connect with UniSim Operations for simulation control and data/event communication. The OTS Vendor software must support DCOM.

My Simulator contains Fail Safe Controller, Experion Safety Manager and SCADA database. Are these included in the ProSim Bridge software license?
Yes, the UniSim Operation platform, a software component in the ProSim Bridge, provides simulation capabilities for the Fail Safe Controller, the Experion Safety Manager and Experion SCADA database. In addition, the ProSim Bridge also provides simulation for HPM devices and TPS interface integration capabilities with the Simulated Network Interface Module.
UniSim Competency Suite
UniSim ProSim Bridge is part of the UniSim Competency Suite products. The Competency Suite products are based on more than 30 years of experience developing and delivering high fidelity Operator Training Simulator solutions in the process industries. The Suite includes robust software solutions to effectively develop and advance process operations competency of today’s industrial workforce. The integrated, holistic solution helps deliver comprehensive training for console and field operators leading to safe, efficient and incident fee start-ups, shut-downs and daily operations. The suite includes:

- **UniSim Operations**: Operator Training Simulator (OTS), a dynamic process training simulation system to accelerate knowledge transfer by consolidating an entire lifetime of experience into a concise process training curriculum
- **UniSim Curriculum**: Customizable competency model based on the Abnormal Situation Management® (ASM®) Consortium research to align critical skills and behaviors within a structured competency management program
- **UniSim Tutor**: Knowledge capture and propagation tool to teach and evaluates “what if” reflexes and process diagnostic abilities
- **UniSim Field View**: Interactive, navigable, panoramic photograph based field operator training user interface to extends UniSim Operations simulator training to the field operator trainee
- **UniSim 3D Connect**: UniSim Operations simulator integration and connectivity to 3D virtual environments for credible and realistic immersive reality experiences for field operators.

UniSim ProSim Bridge Support Services
The UniSim ProSim Bridge product support services are provided worldwide, through our Benefits Guardianship Program (BGP). BGP is designed to help our customers improve and extend the usage of their applications and the benefits they deliver, by maintaining and safeguarding delivered applications.

Honeywell provides a complete portfolio of service offerings to extend the life of your plant and provide a cost-effective path forward to the latest technology. Honeywell services include:

- Software installation services
- On-site engineering services
- Migration services
- Scope expansion services
- Assessment services
- Performance baseline and tuning services
- Customized training

For More Information
Learn more about how Honeywell’s UniSim ProSim Bridge can provide a robust and credible console operator training experience, visit [www.hwll.co/UltimateOperator](http://www.hwll.co/UltimateOperator) or contact your Honeywell Account Manager.

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