

# COMPLETE SAFETY LIFECYCLE SUPPORT FOR CAPITAL PROJECT EXECUTION.

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Process Safety Suite

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**Honeywell**

# **GROWING PROCESS SAFETY CHALLENGES**

Despite the application of a wide variety of safeguarding measures, accidents in the process industries continue to occur. Plant owners/operators must find ways to better understand the safety status of their assets and then act appropriately. Key information in the process safety lifecycle is often handled through many manual and disconnected steps. This results in inefficient project flow, retyping, errors, compliance issues, increased rework and delayed startups.



## Honeywell Has the Right Solution

Honeywell Process Safety Suite (PSS) is a comprehensive solution that fully automates the process Safety lifecycle, helping to reduce errors, lower costs, continuously monitor operations for hazardous conditions, and provide Safety alerts in a timely fashion.

## Designed to Optimize Existing Operations

No matter where you enter the process Safety lifecycle, Honeywell Process Safety Suite can help you reduce risk and save money, while complying with best engineering practices throughout the operating life of the plant.

This solution enables you to produce all the documentation your project has to deliver. Things like the Cause and Effects matrix, Safety Requirement Specifications, Functional Test procedures are all reports from the database.

With the robust PSS applications, you can employ a single data system to manage all your process Safety risk management analysis and information throughout the life of your project – and for the next 30+ years. The more you use PSS, the more you will benefit from its robust synergies.



### Monitor Risk to Improve Performance

- Integrate process hazards and risk analysis
- Realize the benefits of drawing process hazard analysis (PHA) and layers of protection analysis (LOPA) processes closer together
- Eliminate the difficulty of keeping two separate documents in sync for years to come



### Streamline Work to Enhance Functional Safety

- Simplify preparation of Safety requirement Specifications and SIL calculation documents
- Eliminate the need to retype tag numbers from a PHA or LOPA report
- Improve methods for passing outputs to the SIF implementation team.
- prioritized and addressed promptly while optimizing budget.



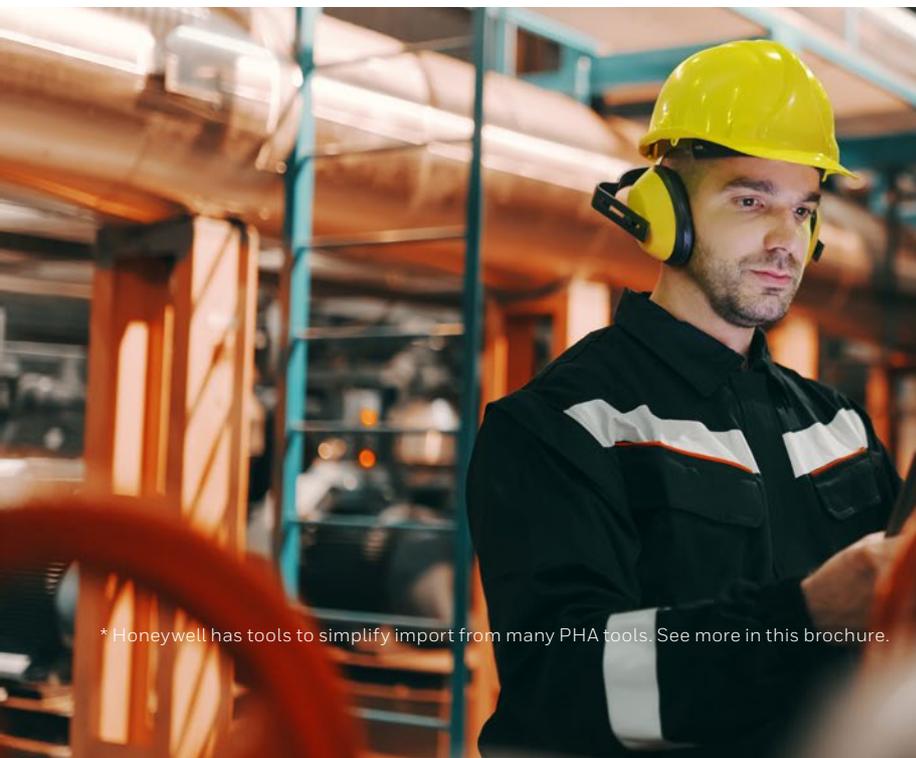
### Utilize Tools to Optimize SIF Programming and Commissioning

- Simplify the work of the functional Safety and instrumentation construction staff
- Employ solutions to ensure systems get built and tested, and that safeguards accomplish the intended risk reduction
- Take advantage of tools supporting late-binding speeding work at the critical project phase



### Take Steps to Ensure Reliable Operations and Maintenance

- Comply with best practices like ISA/IEC 61511 requiring robust testing to ensure safeguards stay in place and work properly every time
- Visualize process safety risk in near real time, compliance to requirements, or indicate when there's an issue
- Provide reliability information as an input to the next revalidation cycle of the PHA



## ARE YOU READY FOR THE FUTURE?

Your plant will run for the next 30 years or more. As such, you have to ensure its operations are safe – cost effectively. There are several logical places to get started:

1. Five-year PHA revalidation – import your current PHA into PSS
2. Confirming or redoing your Safety integrity level (SIL) calculations – build your Safety requirement specification (SRS) in PSS, save time and money, and set yourself up for Step 3.
3. Confirm your systems are working as intended

\* Honeywell has tools to simplify import from many PHA tools. See more in this brochure.

# SAFETY WORKBENCH

**Centralize. Synchronize.  
Minimize Risk.**

Throughout the lifecycle of a capital project, numerous technical disciplines need to be on the same page to properly analyze risk to build processes with safeguards for managing risk within tolerable limits upon start-up and throughout operations.

Historically, process Safety personnel have used methodologies and toolkits to support analytics, ultimately building reports to pass to functional Safety engineers. Then, functional Safety uses a variety of tools to design and document systems based on analytics to ultimately hand over to operations and maintenance. The information switches back and forth many times, and manual data entry, revision control, and normal human behavior creates havoc and leads to systematic errors.

Honeywell Safety Workbench consolidates all of the tools, synchronizes the information for seamless transfer and revision control, and represents the single source of truth for your process and functional Safety data. This solution can be used in conjunction with the other components of Process Safety Suite to keep your data evergreen and monitor performance to minimize risk moving forward.

When you have an issue with a Safety system, you can easily see the effect on your risk profile, –displayed on Your Risk Matrix, making it easier to manage risks and demonstrate adherence to your policies.

Driven by a patented data model, Safety Workbench enables seamless transfer from one process Safety activity to the next. The application enables users to start anywhere in the lifecycle and grow as they go. You can use the full suite to take advantages of the considerable synergies.

- Provides single enterprise solution
- Ensures ISA/IEC 61511 compliance
- Supports seamless data transfer
- Provides single point of data entry
- Allows for concurrent users and projects
- Supports unlimited users (multiple EPCs)
- Utilizes company standards and libraries
- Saves man-hours by utilizing templates
- Manages competencies with user permissions
- Implements revision controls to support stage/gated process

# MANAGE YOUR RISK

## Track. Analyze. Detect Issues.

The Process Safety Analyzer (PSA) module of Honeywell's PSS is advanced software that automates tracking, analysis and reporting on the operation of shutdown systems and Safety elements, enabling users to promptly detect issues and continuously ensure process Safety.

With the PSA solution, industrial organizations can prove to authorities and other entities that continuous validation is performed to essential process Safety components. They can also promptly detect issues for faster action when necessary, and capturing reports to prove proper operation.

- Automates tracking and validating the condition and operation of Safety components to identify risk gaps on a shift or daily basis, so operating teams can fix them quickly
- Employs transparent key performance indicators (KPIs) visualized in Forge Operations Safety Advisor (OSA) to make it easy to shift resources to where they are needed
- Improves compliance with regulations and standards like IEC 61511/61508 with minimal effort
- Detects safety-critical equipment due for test or needing repair
- Keeps supporting data and reports for post-event analysis for auditing and working towards best-in-class safety levels



### SHUTDOWN ANALYZER

- Increased Safety via continuous and effective validation of shutdown systems and prompt detection of issues
- Reduced downtime, minimizing planned shutdowns and using unplanned shutdowns for emergency shutdown (ESD)/planned shutdown (PSD) validation
- Reduced time and effort for shutdown system audits
- Fewer extra personnel onsite for system validation, minimizing risk exposure and transportation costs
- Historical validated record of shutdown system operation for auditing with causes



### SAFETY ELEMENT SCOUT

- Increased Safety by promptly detecting failed operations and easily identifying elements requiring testing/maintenance
- Reduced downtime required for validation, minimizing planned shutdowns
- Less time and effort for validation, minimizing the need for extra personnel onsite and lowering transportation costs and risk exposure
- Historical validated record of Safety operations



### SIL REPORTS

- Increased Safety, quickly identifying items requiring testing or maintenance
- Reduced downtime/deferrals, identifying Safety instrumented functions (SIFs) with high demand above limits and failure rates to take preventative actions
- Less time and effort for validation
- Historical record of SIL KPIs and reports for auditing and post-event analysis

# OPERATE AND MAINTAIN

Visualize. Understand. Improve Decisions.

During the Operate and Maintain phases of the Lifecycle, PSS utilizes an inherited data model, linking risk rankings down to tagged devices and making it easier to support daily operations and maintenance activities.

Forge Operations Safety Advisor (OSA) provides an easy-to-understand picture of your process safety risk as it stands today with visibility at site, division and enterprise level. Forge OSA collects information from your process Operations and Maintenance, then compares them with the risk analyses in your HAZOP and LOPAs to show how your plant is operating by comparing it with the ideal "Digital Twin for Safety" as laid out by your risk assessment teams.

Interfaces with operating data such as process historians and maintenance management systems provide the insight required to make better business decisions regarding testing, planned outages, Safety system performance, and future capital project spend. Previously invisible risk become identifiable by analyzing deviations in operations compared to the original design assumptions.

- Monitors dashboard Safety performance
- Analyzes across the organization
- Reduces time for mining process Safety data to support daily activities
- Maintains an evergreen PHA
- Streamlines Management of Change (MOC) while impacting process Safety
- Supports functional Safety assessments and Safety audits
- Supports bypass management
- Identifies Safety bad actors
- Facilitates testing requirements



## OPERATIONS

- Determines cause association from PHA
- Identifies demands vs. LOPA assumptions
- Determines time in Bypass vs. SIL Calculations
- Identifies spurious trip rate vs. design values



## MAINTENANCE

- Determines on-time testing vs. SIL calculations
- Identifies on-demand SIL calculations
- Supports bypass management
- Enhances functional testing and failure classification



Reduce Man-hours. Drive Consistency. Ensure Functional Safety.

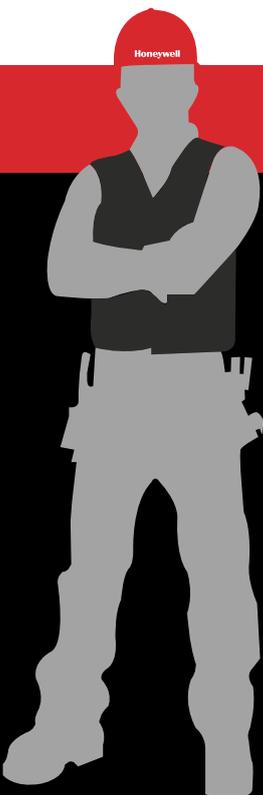
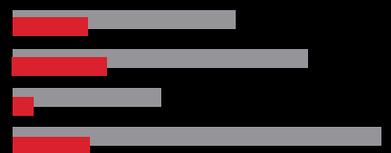
## WHAT IS YOUR COPY FACTOR?

### LEVERAGE TEMPLATES

- Equipment Under Control
- Independent Protection Layer
- Copy/Use Existing Assemblies
- What is your "Copy Factor?"

### HOURS PER PROTECTION LAYER

- Integrity Level Verification
- Safety Requirements
- Cause & Effect Intersections
- Functional Tests Plans
- Traditional Safety Workbench



# AUTOMATE ALL ASPECTS OF THE SAFETY LIFECYCLE

**Centralize. Synchronize. Minimize Risk.**

Honeywell Process Safety Suite delivers solutions to assist customers in automating and managing all aspects of their process safety lifecycle.

These solutions help prove compliance with regulations and standards, and provide a status of overall risk. They also help identify areas where problems may occur.



## PROCESS SAFETY

- PHA/LOPA Tightly Integrated
- Cause or Consequence Based
- Flexible Library Settings
- Recommendation Tracking
- Cause Summing
- Data Migration Tools
- Multiple Risk Matrices
- Functional Safety Assessments
- Gap Assignments
- Configurable Checklists



## FUNCTIONAL SAFETY

- Robust SIL Calculation Engine
- Manage Failure Rate Library
- Calculate PFD, RRF and MTTFs
- Test and Diagnostic Coverage
- Partial Stroke Testing
- CCF/3-layered Voting
- Graphical Architecture
- SRS IEC 61511 Compliant
- Equipment Under Control
- Advance Copy/Clone



## OPERATIONS AND MAINTENANCE

- Forge OSA for near real time process safety risk visualization.
- Evergreen Cause & Effects matrix
- Standardize Testing Strategy
- Intelligent Test Plans
- End-to-end Test Procedures
- Device-level Test Procedures
- Make Safety Simple Using Safety Workbench

## WORKS WITH HONEYWELL SAFETY MANAGER™ SC

Honeywell Safety Manager™ and Safety Manager SC have been reliable safety partners for many years. Process Safety Suite is intended to leverage your existing infrastructure in Safety Manager as well as other SIS logic solver brands.

You will be able to move your SRS design information into our Safety Builder™ software to speed implementation, take out transcription errors, and check for management of change or temporary bypass issues — all in a way that is cyber-secure.



# RELY ON OUR PROCESS SAFETY SERVICES

Honeywell Process Safety Suite comes with worldwide, premium support services. These services encompass the total safety lifecycle and are designed to help customers improve and extend the usage of their solutions and the benefits they deliver, ultimately maintaining and safeguarding their advanced applications.

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

- Process Hazard Analysis (PHA)
- Layers of Protection Analysis (LOPA)
- Reliability Calculations
- Safety Requirements Specification (SRS)
- Cause and Effects
- Functional Test Procedures
- Software Installation Services
- On-site Engineering Services
- Migration Services
- Scope Expansion Services
- Assessment Services
- Performance Baseline and Tuning Services
- Customized Training

Honeywell is the expert global source for consultancy, applications and solutions that can be tailored to the specific needs of each customer. With more than 30 years of experience across oil and gas and other industries, leading companies choose Honeywell to improve Safety and performance.

## For more information

To learn more about Honeywell's Process Safety Suite visit, <https://hwl.co/processsafety suite> or contact your Honeywell account manager.

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## WHY HONEYWELL?

Honeywell Plant and Personal Safety Solutions is a comprehensive portfolio of technologies and services designed to help users reduce the risk of incidents — and respond more quickly and effectively should one occur — thanks to the provision of safety-related data insight. From risk assessments and fire and gas systems to intrusion detection and cyber security, Honeywell integrated solutions are field-proven to ensure safe, secure operations.

THE  
FUTURE  
IS  
WHAT  
WE  
MAKE IT

**Honeywell**