

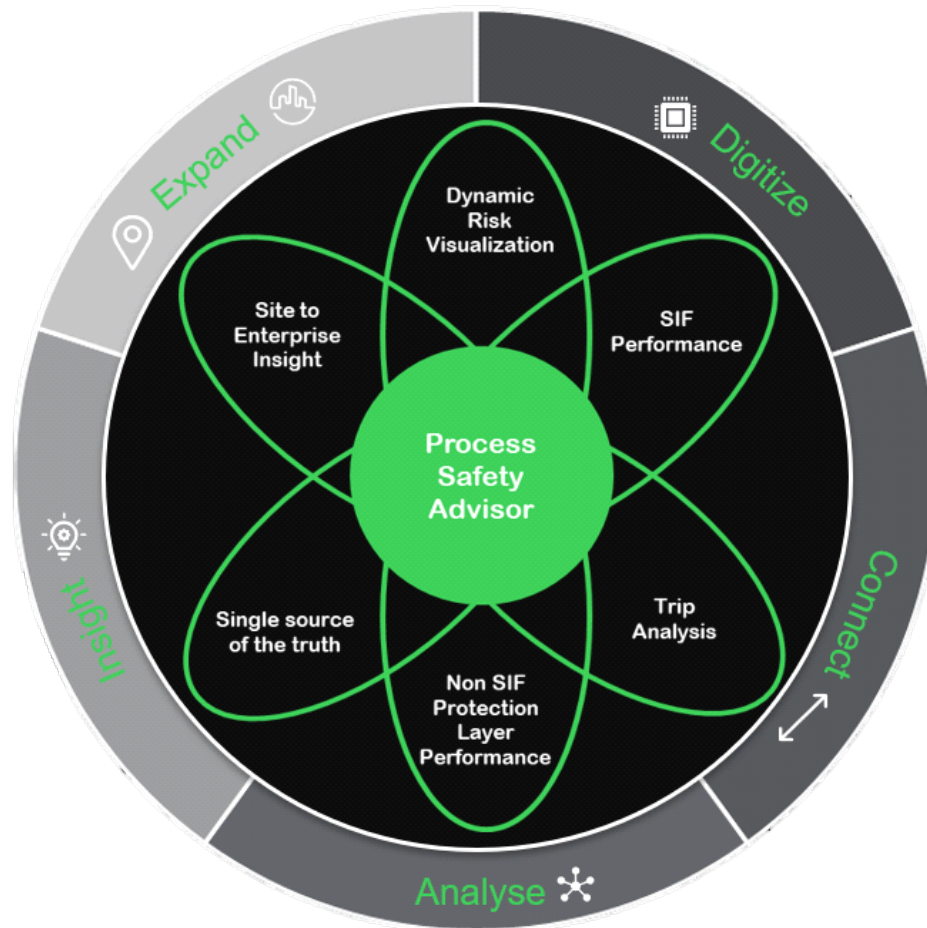
EcoStruxure™ Process Safety Advisor

On Premise and Cloud

PSS 41S-6SafAdv

Product Specification

April 2021



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Overview

EcoStruxure™ Process Safety Advisor (PSA) is an IIoT (Industrial Internet of Things) software platform that assists you in the operation and maintenance of your process safety systems. It collects and validates data from installed Safety Instrumented Systems (SIS) and other Independent Protection Layers (IPLs), presents it in a unified dashboard, and provides tools for analyzing and working with the data. PSA allows you to compare your assumptions during system design to the actual operational data from the plant so you can identify potential discrepancies.

PSA helps process industry operations meet international standards and best practices for safety instrumented systems, including ISA and IEC 61511.

PSA is available in two platforms:

- **Process Safety Advisor - On Premise (PSA OP)** is installed at each plant site for data collection and site-wide safety analytics.
- **Process Safety Advisor - Cloud (PSA Cloud)** is installed at the enterprise level for enterprise-wide data aggregation and risk-based analytics.

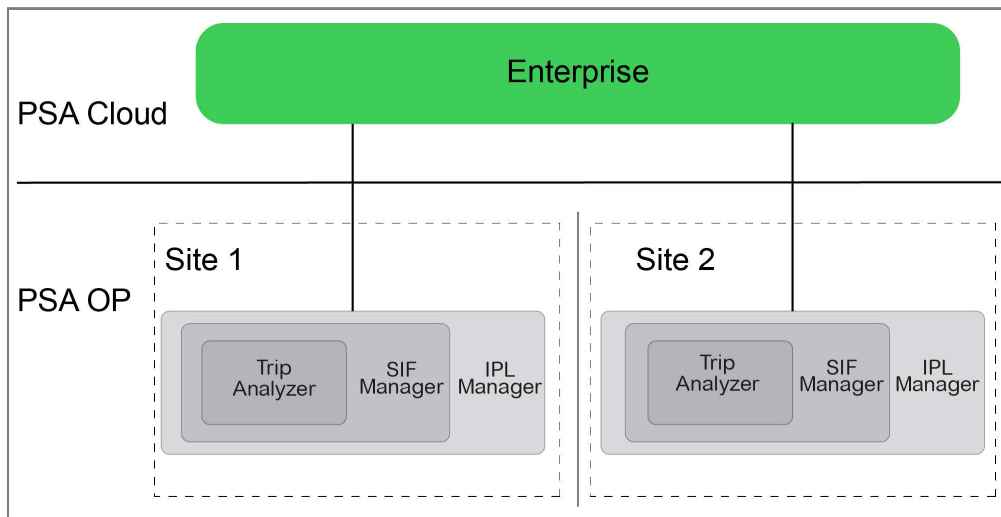
These platforms provide you with dynamic, actionable insight into your operation’s safety and risk status, performance, and history.

PSA OP has three profiles – Trip Analyzer, SIF Manager (SIFM), and IPL Manager (IPLM) – with different feature sets that can be adopted as needed.

- Trip Analyzer provides tools for analyzing trips.
- SIF Manager provides tools for monitoring safety instrumented functions (SIFs).
- IPL Manager provides tools for monitoring independent protection layers (IPLs).

PSA Cloud includes at least one operational site running PSA OP with the IPL Manager profile.

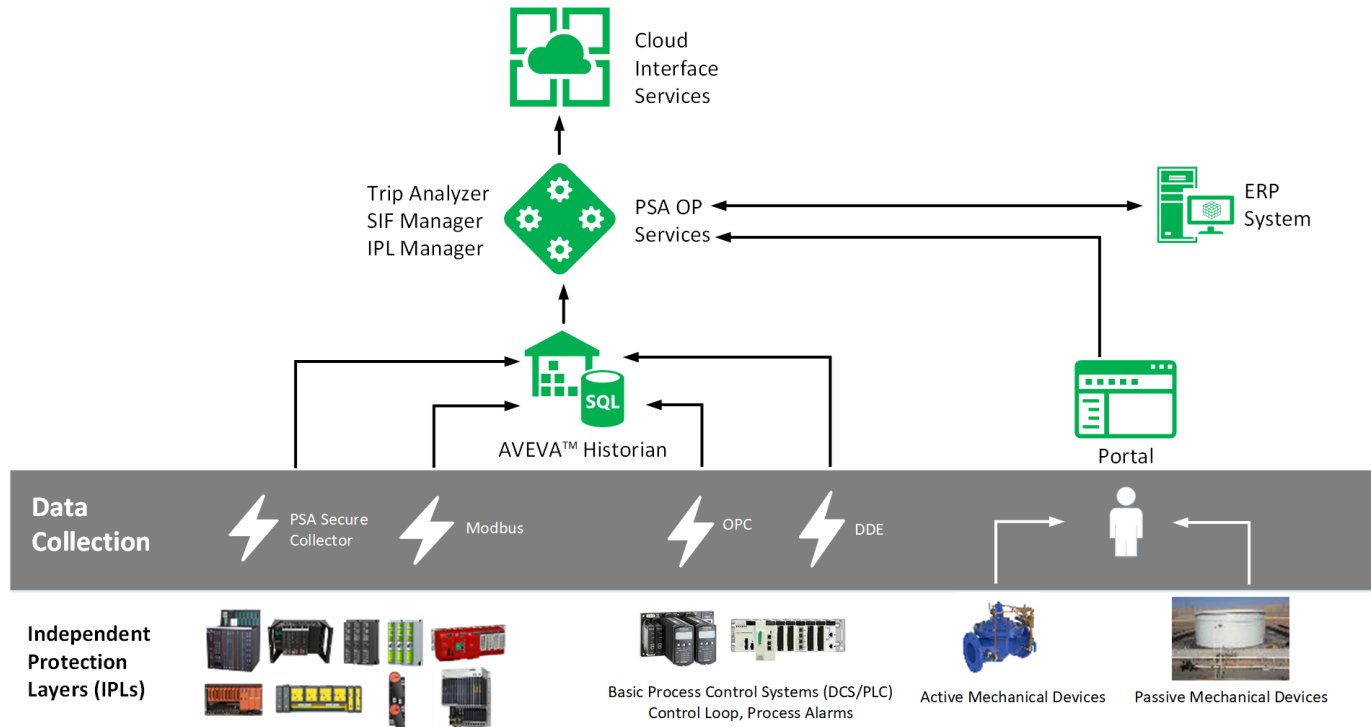
Figure 1 - PSA Platforms



PSA works with the Schneider Electric Triconex™ range of safety systems, but can also connect to other vendors' SIS, BPCS, DCS, and PLCs using industry-standard protocols such as OPC UA and DA, Modbus, and DDE.

For connection to Triconex installations, PSA can connect directly to safety instrumented systems using the TSAA (Triconex System Access Application) protocol or PSA Secure Collector.

Figure 2 - Conceptual Structure of PSA Cloud and PSA OP



Benefits

PSA meets the needs of multiple plant personnel, including engineering, safety, operation, maintenance, and management. Using PSA can help:

- Reduce the duration of planned outages and help get production back online faster.
- Reduce unplanned downtime and help production restart faster after a trip.
- Improve resource utilization and productivity.
- Reduce operation expenses and compliance costs.
- Provide enterprise-wide visibility to current operation of assets.
- Enable comparison and analysis of designed versus actual Safety Instrumented Function (SIF) performance.
- Provide documentation and evidence for evaluating, recording, and collecting Safety Instrumented Systems (SIS) proof test credit.

Platforms and Profiles Overview

Process Safety Advisor On Premise (PSA OP)

PSA OP provides insight to status, health, and compliance of the IPLs running in your plant's safety-related systems. This includes the SIFs, as well as non-SIF IPLs such as Basic Process Control Systems (BPCS), operator alarms, and mechanical devices, such as pressure relief valves and other non-automated equipment. PSA OP includes a trip detection and analysis engine, SIF and IPL impairment analytics engine, safety key performance indicator (KPI) dashboards, detailed reports, and automated email alerts, helping ensure you have comprehensive visibility into the performance and safety integrity of the IPLs implemented in your plant.

PSA OP includes these profiles:

- **Trip Analyzer** – Captures trips for every safety instrumented function (SIF). Generates comprehensive trip reports and trends, detailing full sequence of events, SIF response times, valve response times, and full sequence of events for every SIF activation. Also provides a complete trip event audit trail for every SIF under management.
- **SIF Manager** – Extends Trip Analyzer capabilities to provide a single window into the health, status, and compliance of safety instrumented functions. Continuously monitors SIF performance, validating actual KPIs against design criteria and alerting you when key indicators that impact SIF integrity diverge from requirements. Instant on-demand SIF analytics help meet the requirements of IEC 61511 Ed 2.
- **IPL Manager** – Extends SIF Manager capabilities to provide additional visibility into the status of non-SIF IPLs from other systems, helping monitor the layers of protection and risk mitigation. Non-SIF IPLs include BPCS control loops, operator alarms, mechanical devices, and physical barriers. IPL Manager monitors the status of IPLs and captures impairments. The condition and status of mechanical-device or physical-barrier IPLs are updated via user inputs.

Trip Analyzer is the “base” profile, and the feature set of each profile is incorporated into the next level profile. You can order the profile that suits your needs, allowing you to scale your system. The system hardware and software infrastructure are the same for all profiles.

Process Safety Advisor Cloud (PSA Cloud)

PSA Cloud provides simple browser access to the site or enterprise management team of the ‘as operated’ versus ‘as designed’ process safety system. A concise view of dynamic risk is presented to enable management focus on important deviations.

PSA Cloud provides an infrastructure to connect multiple sites running PSA OP into a single, enterprise-wide platform that provides a globally accessible interface to access each asset's past, present, and future operational risk. PSA Cloud aggregates the IPL performance data from each site, then applies additional analytics to provide a dynamic visualization of the risk level of every Hazardous Event (HE) being mitigated by those IPLs. The system also provides simple visual cues on a global map showing which sites have HEs with an elevated risk level, and allows you to drill down by region, site, and asset type to quickly see underlying causes for the deviations.

Process Safety Advisor OP

PSA OP is a site-wide solution that is scalable both by size of deployment and by functionality. It consists of these profiles:

- Trip Analyzer
- SIF Manager
- IPL Manager

Trip Analyzer

Trip Analyzer streamlines trip investigation and eliminates the complicated, time-consuming, often error-prone data collection and manual handling of trip data.

Trip Analyzer automatically captures every trip on every SIF. Comprehensive trip reports and trends are automatically generated detailing a full sequence of events, SIF response times, valve response times, and full sequence of events for every SIF component. A complete trip event audit trail for every SIF under management is also provided.

Features include:

- Automatic trip reports
- Automatic trip sequence of events
- Critical trip event details
- Trip investigation history audit trail
- Leverage existing information and systems
- Highly scalable to meet current and future needs

Automatic Trip Event Detection

Trip Analyzer automatically captures every trip on every SIF across the entire facility, plant, or enterprise.

A unique trip event and identifier is created and displayed in a comprehensive trip event operations view, providing a clear and easy to understand chronology of each trip event. The trip operational view can be filtered by any attribute (for example, date, time, area, and name) to quickly focus on the specific data of interest.

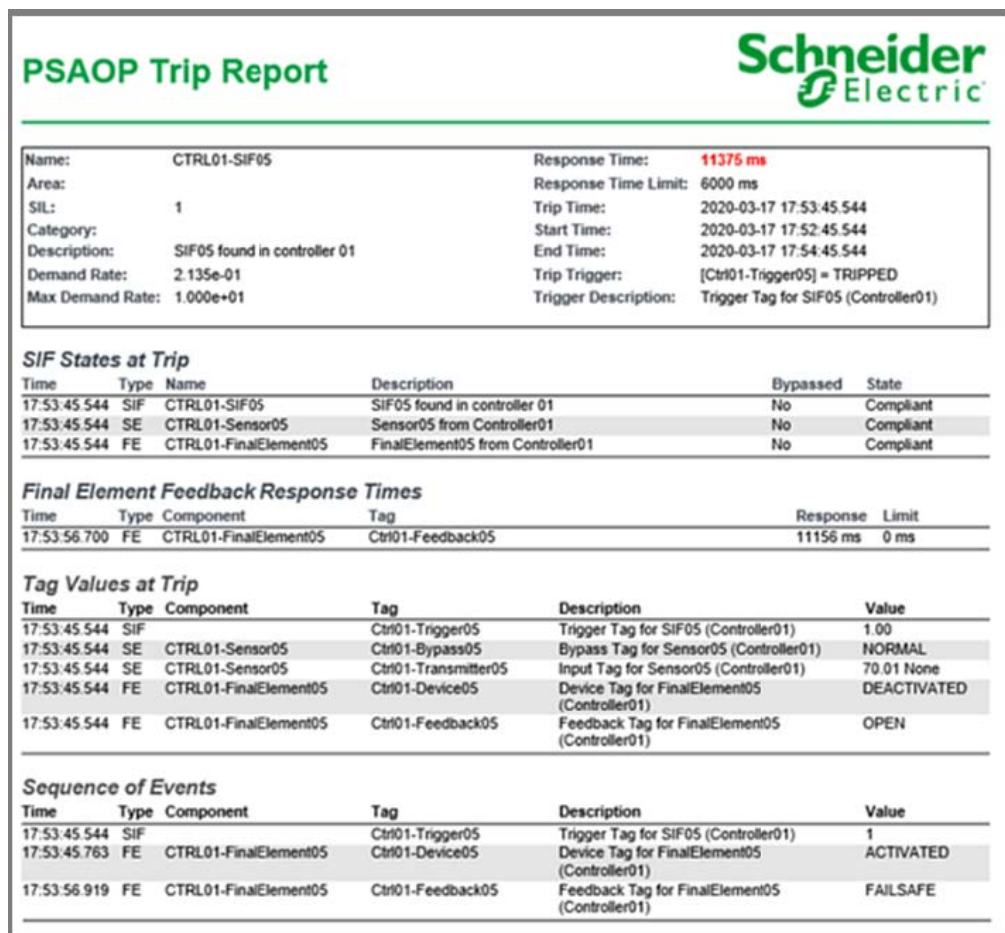
Technology-agnostic Solution

PSA connects with the Schneider Electric Triconex range of safety systems and with other vendors' SIS, BPCS, DCS, and PLCs. Using open-protocol, real time data exchange (such as OPC Modbus or DDE) allows PSA to connect to your automation systems so you can leverage the benefits of PSA OP across all your safety automation systems.

SIF Manager

The SIF Manager profile incorporates Trip Analyzer functionality and extends the analytic capabilities to provide a comprehensive single window into the health, status, and compliance of your safety instrumented functions (SIFs). SIF Manager constantly monitors SIF performance and validates actual SIF KPIs against the original design criteria and alerts you when SIF integrity is diverging from requirements. Instant on-demand SIF analytics help you meet the new requirements of IEC 61511 Ed 2, and help ensure the safeguards that you rely on are working effectively and will operate when needed.

Figure 3 - Sample Trip Report



Key Benefits

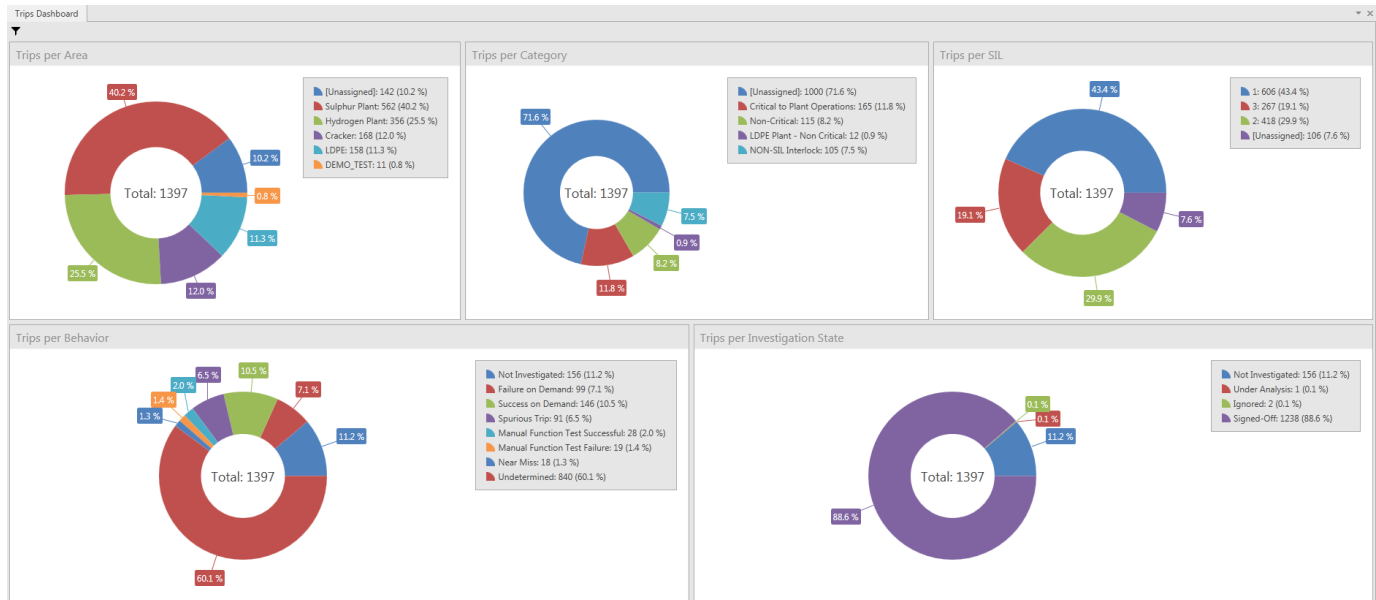
- Situational awareness of SIF health, performance, and compliance in real time
- Significantly reduce human intervention and manual handling of SIF-related administration activities
- Helps reduce cost of compliance to IEC 61511 Ed2
- Helps reduce unplanned outage duration
- Helps reduce planned outage duration
- Helps identify potential safety issues before an incident occurs
- Helps demonstrate best practices to regulators, insurers, and shareholders

Automatic SIF Demand Analytics

Built on Trip Analyzer functionality, SIF Manager adds more comprehensive SIF analytics, such as SIF response time, valve response times, SIF device bypass and fault status at time of trip, SIF demand rate, and proof test compliance status of SIF devices. These additional analytics can be used as evidence to take proof test credit for SIF devices, potentially eliminating the need to perform unnecessary testing.

In addition, SIF Manager *automatically* classifies demand behavior as genuine, spurious, success, or failure. A comprehensive trip investigation environment allows you to modify, edit, and sign off on SIF trip behavior and keep a complete record of each trip investigation. PSA OP also allows you to assign the source of trip initiation as part of each trip investigation.

Figure 4 - Trips Dashboard



SIF KPI Dashboards

SIF Manager quickly determines critical SIFs to focus on at the click of a button. SIF Manager constantly updates dynamic dashboards that display critical SIF KPIs, providing a consolidated snapshot of overall SIF health, status, and compliance.

KPI dashboards include:

- SIF Compliance Statistics
- SIS Device Statistics
- SIF Demand Rate Performance
- SIF Bypass Performance
- SIS Device Bypass Performance
- SIF Trips Performance
- SIS Device Fault Performance
- SIL/PFD Degradation Performance

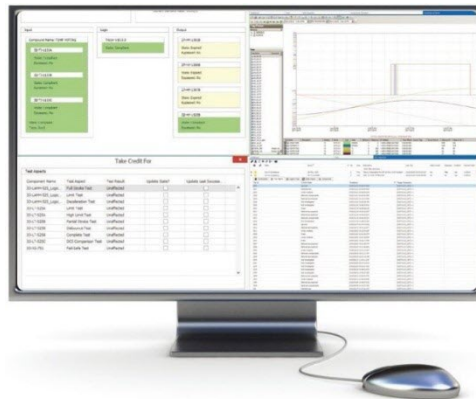
SIF Operational Detail Views

In addition to KPI dashboards, SIF Manager provides comprehensive detailed views of SIF and SIF device compliance, performance, and health statuses. These views help you instantly see which SIFs are not compliant, understand why the status occurred, and determine how to correct the situation. Every detailed view can be filtered and exported to a PDF or Microsoft® Excel® file that you can attach to reports or share with others.

SIF detailed operational views include:

- SIF health, compliance and PFD, bypass, and demand rate
- SIF device health, compliance fault, bypass, and proof test status
- Trip event, investigation status, behavior, and cause
- SIF device bypass performance, status, and performance
- SIF device proof test history

Figure 5 - Detailed Views



IPL Manager

Built on SIF Manager profile functionality, the IPL Manager profile integrates non-SIF IPLs from other systems, helping to form layers of protection and risk mitigation with BPCS control loops, operator alarms, mechanical devices, and physical barriers. Just as digital data from the SIS are integrated in SIF Manager, IPL status of BPCS control loops and operator alarms are integrated in IPL Manager. The condition/status of mechanical device or physical barrier IPLs are updated via user inputs or integration with the plant's ERP system, such as SAP.

IPL Detail Views

IPL detailed views include:

- IPL Compliance Status
- IPL Functional Status
- IPL Status History
- IPL Impairment History
- IPL Impairment Event Log

IPL Operational Views

IPL Manager provides comprehensive, detailed views of IPL compliance, performance, and health status, allowing you to instantly see which IPLs are non-compliant or non-functional. IPL Manager continuously monitors the status of each IPL and displays IPL condition, status, functional ability, and other safety-relevant parameters. Each IPL impairment event is logged and stored in the historical audit trail.

Figure 6 - Operational Details

The screenshot displays the 'IPLs Configuration' view in the EcoStruxure Process Safety Advisor OP. The main content is a table listing 8 IPLs, all of which are in a 'Compliant' state. The table columns are: State, Name, Type, Area, Description, State Forced, and Is Functional. The items listed are Alarm001, Alarm002, BPCS001, BPCS002, BPCS003, PSV001, PSV002, and PSV003. A summary bar at the bottom right of the table indicates 'Count=8'. The status bar at the very bottom of the application window shows 'Command Manager has extracted and executed a command (Command count:1)' and the user 'Username: DESKTOP-P9CQK4J\PSAOPVM'.

State	Name	Type	Area	Description	State Forced	Is Funct...
Compliant	Alarm001	Alarm	01	Alarm for Demo	No	Yes
Compliant	Alarm002	Alarm	01	Alarm For Demo	No	Yes
Compliant	BPCS001	BPCS	01	BPCS for Demo	No	Yes
Compliant	BPCS002	BPCS	01	BPCS for Demo	No	Yes
Compliant	BPCS003	BPCS	01	BPCS for Demo	No	Yes
Compliant	PSV001	Mechanical Device	01	PSV for Demo	No	Yes
Compliant	PSV002	Mechanical Device	01	PSV for Demo	No	Yes
Compliant	PSV003	Mechanical Device	01	PSV for Demo	No	Yes

Count=8

Command Manager has extracted and executed a command (Command count:1) Username: DESKTOP-P9CQK4J\PSAOPVM

Process Safety Advisor Cloud

Process Safety Advisor (PSA) Cloud allows you to connect multiple PSA OP systems from each of your operating assets into a single enterprise-wide secure cloud infrastructure. PSA Cloud allows you to automatically monitor the health of every Independent Protection Layer (IPL) on every connected asset, and dynamically displays the actual operating risk against the as-designed risk of each hazardous event. Every site is aggregated into a cloud-based interface, providing instant visibility of every asset's risk performance to all stakeholders.

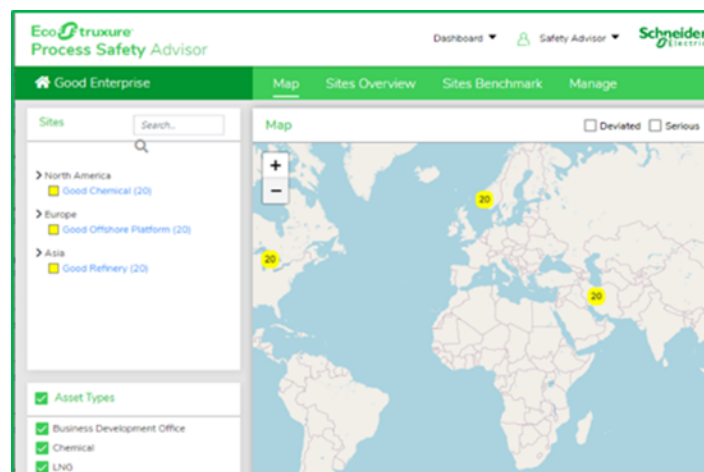
PSA Cloud helps reduce infrastructure costs by promptly providing relevant information to stakeholders. It helps demonstrate good safety practices to regulators, insurers, shareholders, and the public, and provides benefits that contribute to more reliable and sustainable business operations.

The PSA Cloud interface includes:

- Global enterprise view
- Regional asset view
- Sites view
- Unit, area, and equipment view
- Dynamic risk matrix (for multiple consequences)
- Impaired IPL view
- IPL Impairment Detail view
- Demands overview
- Demand investigation history
- Forecast future risk modeling
- Corporate risk and safety KPI view

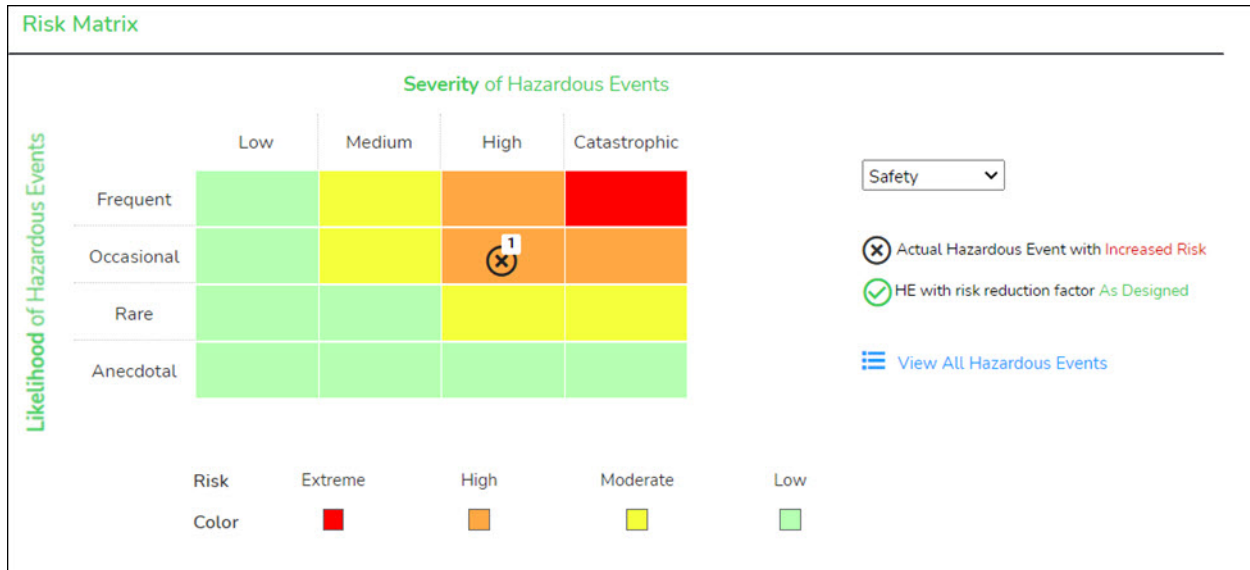
A global functional safety view allows your team to analyze issues and solve problems quickly. Digital recordings of plant performance capture your plant safety performance intellectual property, supporting asset performance benchmarking and providing critical insight that helps drive continuous improvement and adherence to best practices.

Figure 7 - Global Functional Safety View



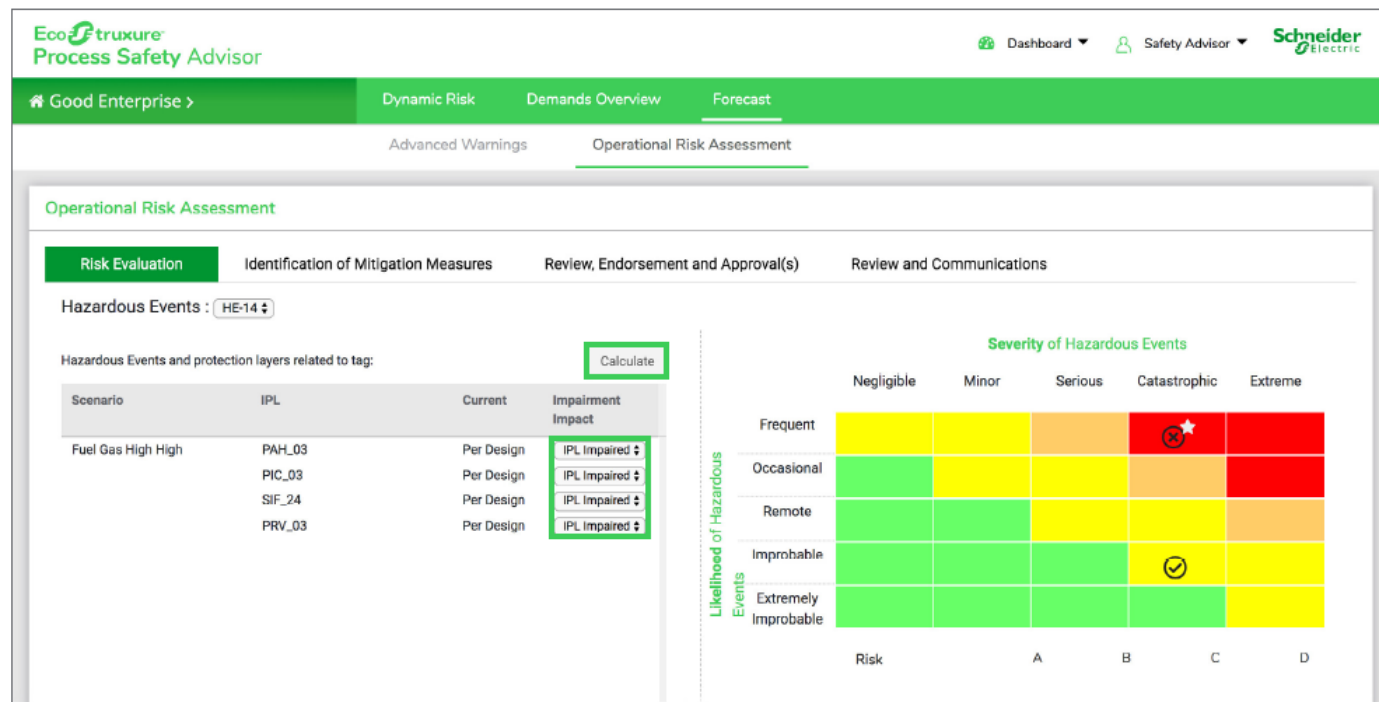
PSA Cloud allows you to quickly and simply assess the risk impact of any impaired IPL on safety, environment, production, or commercial risk criteria. A corporate risk matrix displays a dynamic risk visualization of hazardous events across operating assets. The matrix is always available and is regularly updated.

Figure 8 - Risk Matrix



The application also provides the ability to run “what if” scenarios to model future risk posture based on current actual risk and IPL status, allowing operations to instantly see the impact of a future IPL impairment before a device is taken out of service.

Figure 9 - Risk Evaluation



System Architectures

The PSA network configuration must follow the guidelines and cybersecurity requirements for the site where it will be installed.

For hardware and software requirements for isolated architectures, see Hardware and Software Specifications, page 16.

Isolated (Air Gapped)

In some cases, PSA must be isolated from other systems at the control or enterprise level and must closely follow the dedicated separation of the emergency shutdown system. This isolated (air gapped) architecture is limited to the PSA OP functionality and does not support the full Process Safety Advisor Cloud management access. You can implement an isolated architecture using virtualization (for example, HP V91 Server) or as native (for example, HP H90). These are typical network diagrams for isolated configurations:

Figure 10 - Isolated (Air Gapped) Architecture for Large Systems – V91 All-in-one Server, Optional H92 Console

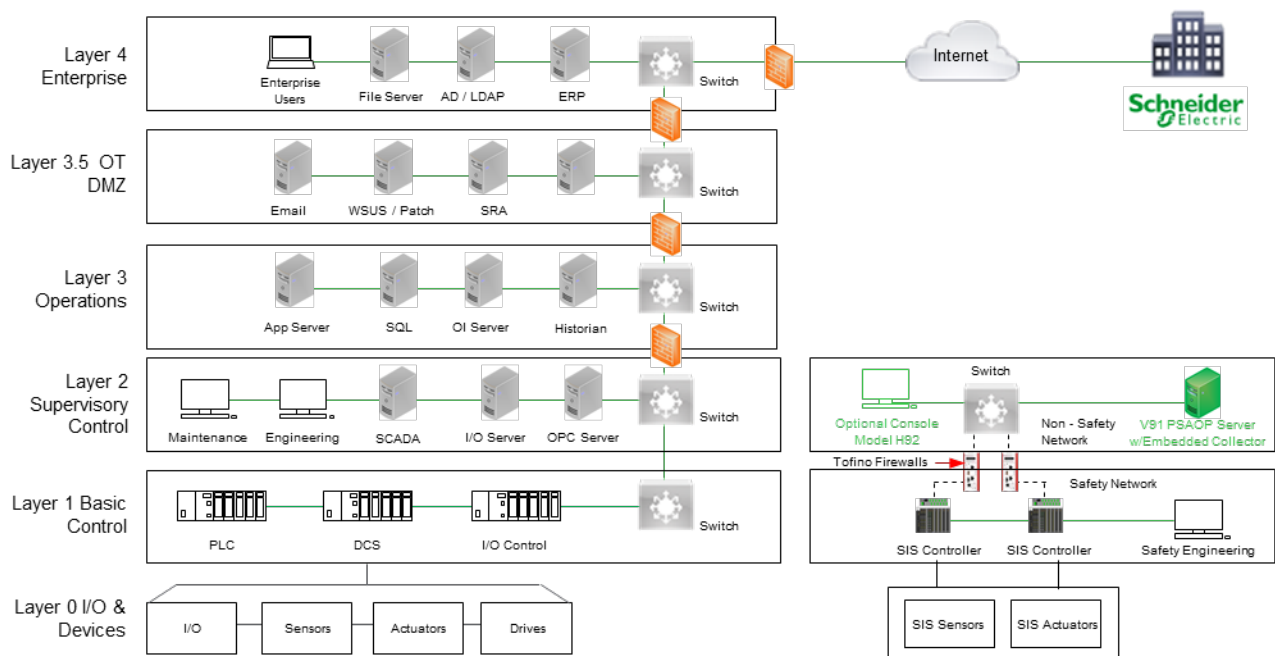
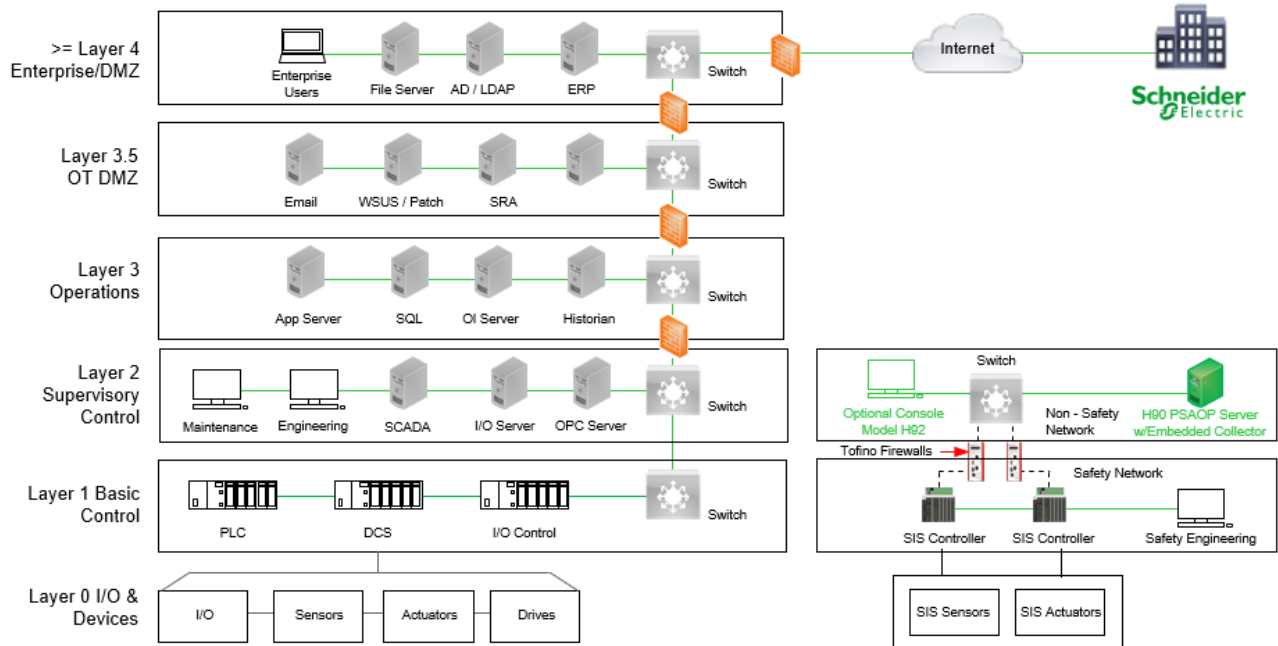


Figure 11 - Isolated (Air Gapped) Architecture for Small and Medium Systems – H90 All-in-one Server, H92 Console



Connected

PSA can be configured to connect to the operations/enterprise level, and then the cloud. Cybersecurity provisions, such as firewalls, must be used in compliance with ISA 62443 standards or your internal standard. You can implement a connected architecture with virtualization (for example, HP V91 Server) or native (for example, HP H90). These are typical network diagrams for a connected configuration:

Figure 12 - Connected Architecture for Large Systems — V91 PSA OP Server, H90 Collector, Optional H92 Console, H92 IoT Hub Gateway

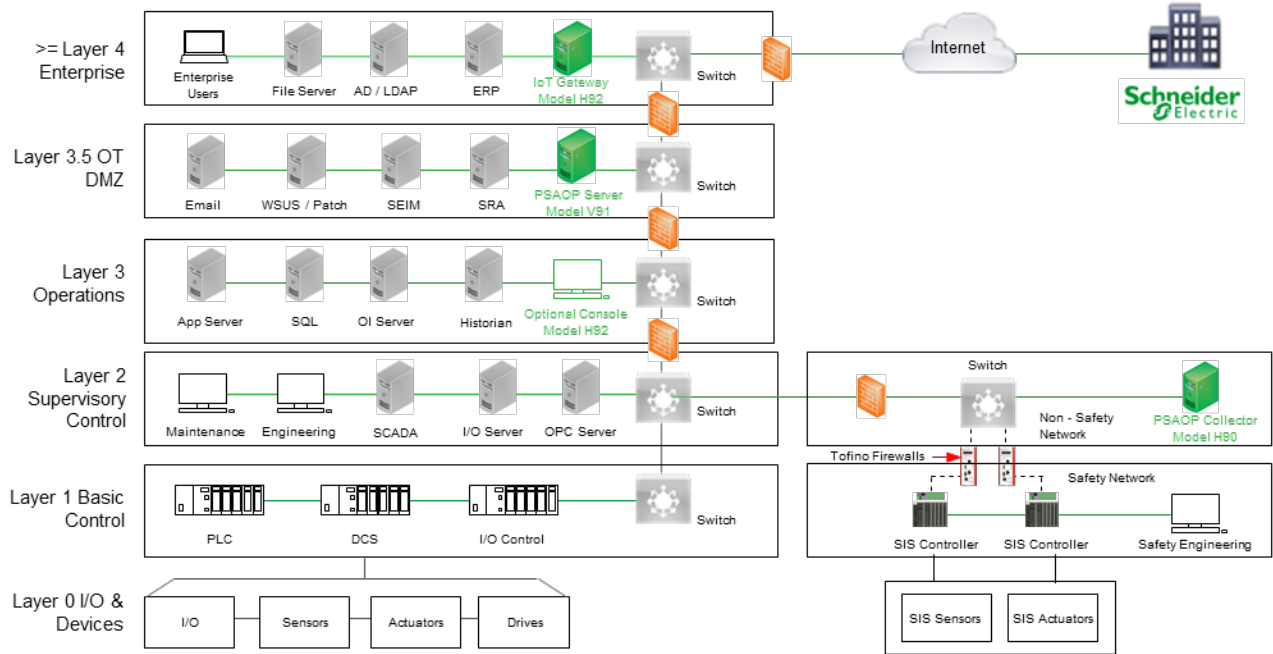
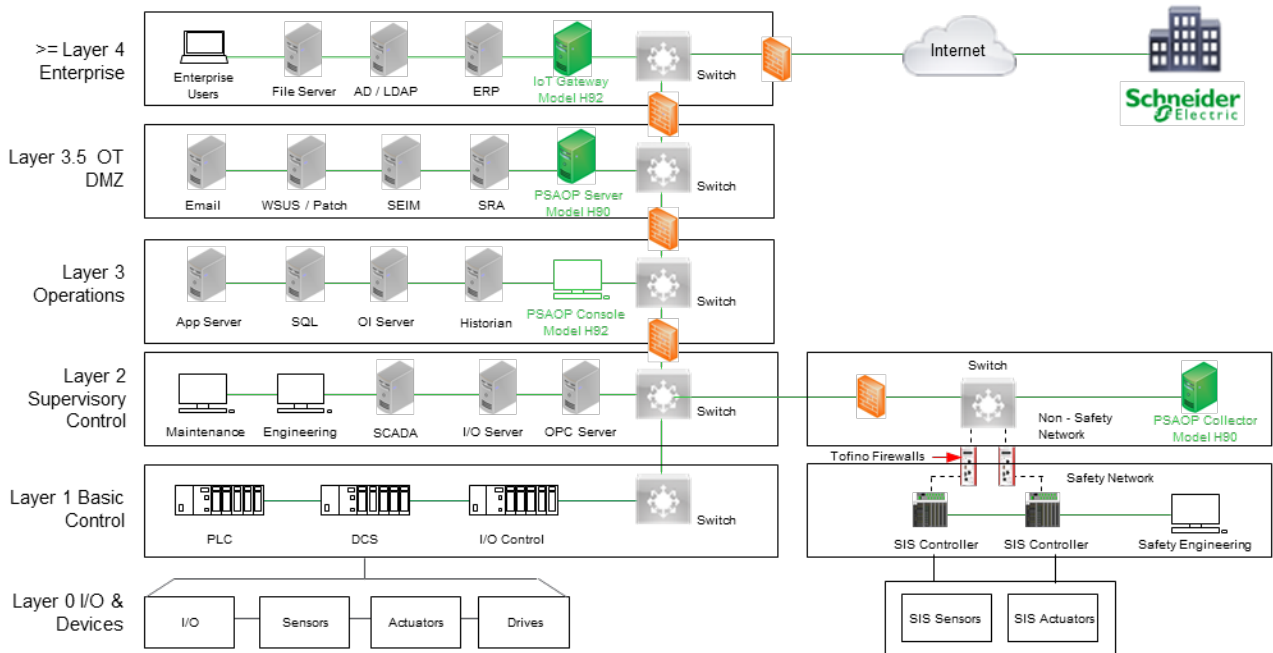


Figure 13 - Connected Architecture for Small and Medium Systems — H90 PSA OP Server, H90 Collector, H92 Console, H92 IoT Hub Gateway



Hardware and Software Specifications

NOTE: All model codes are BuyAutomation model codes.

Table 1 - Isolated Architecture (Air Gapped) for Large Systems

System	Hardware/Software
V91 Server Model Code: V914Q4110D60	Factory Hardware: <ul style="list-style-type: none"> • Operating System: Windows® Server 2016 or later • RAM: 96 GB DDR4 (6 x 16 GB) • CPU: 2 x 8-Core Intel® CPU Hyperthreaded • Storage: 2 x 600 GB RAID 1 and 3 1.2 TB RAID 5 (BA Ref F) • NIC: 4 x 10/100/1000 copper RJ45 • Standard mouse (included) • Standard keyboard (included) Factory Pre-installed Software: <ul style="list-style-type: none"> • Windows Server 2016 Enterprise or later • Microsoft Hyper V Manager • McAfee® Antivirus Protection • HPE® Smart Storage RAID Utilities
PSA OP Core Virtual Machine	<ul style="list-style-type: none"> • Windows Server 2016 Standard • McAfee Antivirus Protection • Windows IIS/SMTP • AVEVA System Management Console • Microsoft SQL Server Express • PSA OP Core Services • PSA OP Database • IAS Process Monitor • IAS Historian Config Service • IAS License Console • PSA OP Console (for configuration) • AVEVA Historian Client 2020
Historian Virtual Machine	<ul style="list-style-type: none"> • Windows Server 2016 Standard • McAfee Antivirus Protection • AVEVA System Management Console • AVEVA Historian Server 2020 • AVEVA Historian Client 2020 • STS Detection Service • IAS Process Monitor • Microsoft SQL Server Express

Table 1 - Isolated Architecture (Air Gapped) for Large Systems (Continued)

System	Hardware/Software
Collector Virtual Machine	<ul style="list-style-type: none"> • Windows Server 2016 Standard • McAfee Antivirus Protection • AVEVA System Management Console • PSA Secure Collector • IAS Process Monitor • AVEVA OI Server Standard • IAS License Console
Console Virtual Machine	<ul style="list-style-type: none"> • Windows Server 2016 Standard • McAfee Antivirus Protection • AVEVA Historian Client 2020 • AVEVA System Management Console • PSA OP Console • Windows Remote Desktop Server (RDS)
Optional Components	<ul style="list-style-type: none"> • Greyware NTP Client <ul style="list-style-type: none"> ◦ Server GW960350 ◦ Client GW960370

Table 2 - Isolated Architecture (Air Gapped) for Small and Medium Systems

System	Hardware/Software
PSA Machine	
H90 Server Model Code: H90QJQ9014M0	<p>Hardware:</p> <ul style="list-style-type: none"> • Operating System: Windows Server 2016 or later • RAM: 32 GB DDR4 (2 x 16 GB) • CPU: 2 x 8-Core Intel CPU Hyperthreaded • NIC: 4 x 10/100/1000 copper RJ45 • Standard mouse (included) • Standard keyboard (included) <p>Pre-installed Software:</p> <ul style="list-style-type: none"> • Windows Server 2016 Standard or later • Microsoft Hyper V Manager • McAfee Antivirus Protection • HPE Smart Storage RAID Utilities <p>Software:</p> <ul style="list-style-type: none"> • AVEVA System Management Console • Microsoft SQL Server Express • AVEVA Historian Server 2020 • AVEVA Historian Client 2020 • PSA OP Core Services • PSA OP Database • IAS Process Monitor

Table 2 - Isolated Architecture (Air Gapped) for Small and Medium Systems (Continued)

System	Hardware/Software
	<ul style="list-style-type: none"> • STS Detection Service • IAS Historian Config Service • IAS License Console • PSA Secure Collector • PSA OP Console (for configuration) • AVEVA OI Server Standard Options: <ul style="list-style-type: none"> • Greyware NTP Client <ul style="list-style-type: none"> ◦ Server GW960350 ◦ Client GW960370
Console	
H92 Workstation Model Code: H92A0K9M0100	Hardware: <ul style="list-style-type: none"> • RAM: 8 GB • CPU: 1 x 1 TB ATA HD • NIC: 1 x 10/100/1000 copper RJ45 • Standard monitor • Standard mouse (included) • Standard keyboard (included) Pre-installed Software: <ul style="list-style-type: none"> • Windows 10 • McAfee Antivirus Protection Software: <ul style="list-style-type: none"> • AVEVA Historian Client • PSA OP Console

Table 3 - Connected Architecture for Large Systems

System	Hardware/Software
PSA Machine	
V91 Server Model Code: V914Q4110D60	Factory Hardware: <ul style="list-style-type: none"> • Operating System: Windows Server 2016 or later • RAM: 96 GB DDR4 (6x 16 GB) • CPU: 2 x 8-Core Intel CPU Hyperthreaded • NIC: 4 x 10/100/1000 copper RJ45 • Standard mouse (included) • Standard keyboard (included) Factory Pre-installed Software: <ul style="list-style-type: none"> • Windows Server 2016 Enterprise or later • Microsoft Hyper V Manager • McAfee Antivirus Protection • HPE Smart Storage RAID Utilities

Table 3 - Connected Architecture for Large Systems (Continued)

System	Hardware/Software
PSA OP Core Virtual Machine	<ul style="list-style-type: none"> • Windows Server 2016 Standard • McAfee Antivirus Protection • Windows IIS/SMTP • AVEVA System Management Console • Microsoft SQL Server Express • PSA OP Core Services • PSA OP Database • IAS Process Monitor • IAS Historian Config Service • IAS License Console • PSA OP Console (for configuration) • AVEVA Historian Client 2020
Historian Virtual Machine	<ul style="list-style-type: none"> • Windows Server 2016 Standard • McAfee Antivirus Protection • AVEVA System Management Console • AVEVA Historian Server 2020 • AVEVA Historian Client 2020 • STS Detection Service • IAS Process Monitor • Microsoft SQL Server Express
Console Virtual Machine	<ul style="list-style-type: none"> • Windows Server 2016 Standard • McAfee Antivirus Protection • AVEVA Historian Client 2020 • AVEVA System Management Console • PSA OP Console • Windows Remote Desktop Server (RDS)
Optional Components	<ul style="list-style-type: none"> • Greyware NTP Client <ul style="list-style-type: none"> ◦ Server GW960350 ◦ Client GW960370

Table 3 - Connected Architecture for Large Systems (Continued)

System	Hardware/Software
Collector	
H90 Server Model Code: H90QH9013M0	Hardware: <ul style="list-style-type: none"> • RAM: 16 GB • Storage: 2 x 600 GB RAID 1 • CPU: 2 x 8-core CPU • NIC: 4 x 10/100/1000 copper RJ45 • Standard mouse (included) Pre-installed Software: <ul style="list-style-type: none"> • Windows Server 2016 or later • McAfee Antivirus Protection Software: <ul style="list-style-type: none"> • AVEVA System Management Console • IAS License Console • IAS Process Monitor • PSA OP Secure Collector • AVEVA OI Server Standard
Console	
H92 Workstation Model Code: H92A0K9M0100	Hardware: <ul style="list-style-type: none"> • RAM: 8 GB • CPU: 1 x 1 TB ATA HD • NIC: 1 x 10/100/1000 copper RJ45 • Standard monitor • Standard mouse (included) • Standard keyboard (included) Pre-installed Software: <ul style="list-style-type: none"> • Windows 10 • McAfee Antivirus Protection Software: <ul style="list-style-type: none"> • AVEVA Historian Client 2020 • PSA OP Console

Table 3 - Connected Architecture for Large Systems (Continued)

System	Hardware/Software
IloT Hub Gateway	
H92 Workstation Model Code: H92A0K9M0100	Hardware: <ul style="list-style-type: none"> • RAM: 8 GB • CPU: 1 x 1 TB ATA HD • NIC: 1 x 10/100/1000 copper RJ45 • Standard monitor • Standard mouse (included) • Standard keyboard (included) Pre-installed Software: <ul style="list-style-type: none"> • Windows 10 • McAfee Antivirus Protection Software: <ul style="list-style-type: none"> • AVEVA FS Gateway (SMC Logger) • PSA OP Cloud Gateway Service • PSA OP Cloud Synchronization Service

Table 4 - Connected Architecture for Small and Medium Systems

System	Hardware/Software
PSA Machine	
<p>H90 Server</p> <p>Model Code: H90QJQ9014M0</p>	<p>Hardware:</p> <ul style="list-style-type: none"> • Operating System: Windows Server 2016 or later • RAM: 32 GB DDR4 (2 x 16 GB) • CPU: 2 x 8-Core Intel CPU Hyperthreaded • NIC: 4 x 10/100/1000 copper RJ45 • Standard mouse (included) • Standard keyboard (included) <p>Pre-installed Software:</p> <ul style="list-style-type: none"> • Windows Server 2016 Standard or later • McAfee Antivirus Protection • HPE Smart Storage RAID Utilities <p>Software:</p> <ul style="list-style-type: none"> • AVEVA System Management Console • Microsoft SQL Server Express • AVEVA Historian Server 2020 • AVEVA Historian Client 2020 • PSA OP Core Services • PSA OP Database • IAS Process Monitor • STS Detection Service • IAS Historian Config Service • IAS License Console • PSA OP Console (for configuration) • AVEVA OI Server Standard <p>Options:</p> <ul style="list-style-type: none"> • Greyware NTP Client <ul style="list-style-type: none"> ◦ Server GW960350 ◦ Client GW960370

Table 4 - Connected Architecture for Small and Medium Systems (Continued)

System	Hardware/Software
Collector	
H90 Server Model Code: H90QHQ9013M0	Hardware: <ul style="list-style-type: none"> • RAM: 16 GB • Storage: 2 x 600 GB RAID 1 • CPU: 2 x 8-core CPU • NIC: 4 x 10/100/1000 copper RJ45 • Standard mouse (included) Pre-installed Software: <ul style="list-style-type: none"> • Windows Server 2016 or later • McAfee Antivirus Protection Software: <ul style="list-style-type: none"> • AVEVA System Management Console • IAS License Console • IAS Process Monitor • PSA Secure Collector • AVEVA OI Server Standard
Console	
H92 Workstation Model Code: H92A0K9M0100	Hardware: <ul style="list-style-type: none"> • RAM: 8 GB • CPU: 1 x 1 TB ATA HD • NIC: 1 x 10/100/1000 copper RJ45 • Standard monitor • Standard mouse (included) • Standard keyboard (included) Pre-installed Software: <ul style="list-style-type: none"> • Windows 10 • McAfee Antivirus Protection Software: <ul style="list-style-type: none"> • AVEVA Historian Client 2020 • PSA OP Console

Table 4 - Connected Architecture for Small and Medium Systems (Continued)

System	Hardware/Software
IIoT Hub Gateway	
H92 Workstation Model Code: H92A0K9M0100	Hardware: <ul style="list-style-type: none"> • RAM: 8 GB • CPU: 1 x 1 TB ATA HD • NIC: 1 x 10/100/1000 copper RJ45 • Standard monitor • Standard mouse (included) • Standard keyboard (included) Pre-installed Software: <ul style="list-style-type: none"> • Windows 10 • McAfee Antivirus Protection Software: <ul style="list-style-type: none"> • AVEVA FS Gateway (SMC Logger) • PSA OP Cloud Gateway Service • PSA OP Cloud Synchronization Service

Functions by Profile

Profile	Trip Analyzer	SIF Manager	IPL Manager	Cloud
Trip Events				
Detection	X	X	X	X
Investigation	X	X	X	X
Historical Information	X	X	X	X
Report Generation	X	X	X	X
Trending	X	X	X	X
Trips Dashboard	X	X	X	X

Profile	Trip Analyzer	SIF Manager	IPL Manager	Cloud
SIFs				
Status Monitoring		X	X	X
Historical Status		X	X	X
Demand Rate KPI		X	X	X
SIFs Demand Dashboard		X	X	X

Profile	Trip Analyzer	SIF Manager	IPL Manager	Cloud
Components (Sensors, Final Elements, Logic Solvers)				
Status Monitoring		X	X	X
Historical Status		X	X	X

Profile	Trip Analyzer	SIF Manager	IPL Manager	Cloud
Component Faults				
Tracking		X	X	X
Component Fault Dashboard		X	X	X

Profile	Trip Analyzer	SIF Manager	IPL Manager	Cloud
Bypass Events				
Tracking		X	X	X
Trending		X	X	X
Bypass Rate KPI		X	X	X
Bypass Dashboard		X	X	X
Historical Bypass Events		X	X	X


Profile	Trip Analyzer	SIF Manager	IPL Manager	Cloud
Trip Events				
Investigation to Include Components		X	X	X
Enhanced Trip Report Generation		X	X	X
Automatic Behavior Qualification		X	X	X
Credit for a Trip as a Successful Proof Test		X	X	X
Manual Trips		X	X	X

Profile	Trip Analyzer	SIF Manager	IPL Manager	Cloud
Proof Tests				
Tracking		X	X	X
Trending		X	X	X
Deferral		X	X	X
Historical Proof Tests		X	X	X
Dynamic PFD Calculation		X	X	X
SAP Connectivity		X	X	X

Profile	Trip Analyzer	SIF Manager	IPL Manager	Cloud
Non-SIL IPLs (Alarms, BPCS, Mechanical Devices)				
Health Monitoring			X	X
Impairment Tracking			X	X
Enterprise Level View				X
Hazardous Events Monitoring				X
Dynamic Risk Matrix				X
Safety Index Report				X
Remote Trip Investigation				X
What-if Analysis				X

Related Documents

Document Number	Description
B0750TH	<i>EcoStruxure™ Process Safety Advisor - On Premise (OP) User's Guide</i>
B0750TL	<i>EcoStruxure™ Process Safety Advisor - Installation Guide</i>

 **WARNING:** This product can expose you to chemicals including lead and lead compounds, which are known to the State of California to cause cancer and birth defects or other reproductive harm. For more information, go to www.p65warnings.ca.gov/.

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