



#safetygoesdigital



Safety Lifecycle Digitalization

**A Comprehensive Solution to handle all
your Functional Safety Requirements**



Identifying the Challenges in Functional Safety Management

In the process industry, serious trips and accidents often result from two main factors: human error and lacking functional safety management processes. A single plant trip can have a serious impact on the environment and lead to immense financial losses, making effective functional safety management crucial. The challenges can be categorized into those arising from the industry itself and those from the operation and maintenance phase.

Challenges in Process Industry

Macroeconomic Pressures: The need for increased productivity year on year raises risks and operational costs.

Skilled Personnel Shortage: There is a scarcity of skilled and qualified personnel, leading to loss of critical knowledge when employees leave, compounded by inadequate systems to retain workflow information.

Multiple Installations: Managing functional safety across multiple sites, especially on a global scale, significantly increases operational costs.

Compliance Over Time: Maintaining compliance with safety design requirements over time is challenging due to continuous changes in the operational conditions.

Challenges in the Operational & Maintenance Phase

Risk Management: Quantifying and visualizing risk in real time is difficult, making it hard to understand the impact of specific actions or changes.

Monitoring Bad Actors: Identifying and monitoring the behavior of bad actors early is essential to take timely corrective actions.

Document Management: Effective functional safety management requires seamless flow of information across departments. This is challenging due to the use of different tools, which often leads to inconsistency and duplications.

Functional Safety Management: Different companies typically use different platforms throughout the lifecycle, which leads to increased complexity of the FSM. The gap between design and operation, needs continuous monitoring and mitigation.

Advancing Functional Safety Management through Automation and Risk Reduction

HIMA offers a comprehensive suite of applications that supports plant operators in achieving safety & security, enduring compliance, streamline engineering, and effective management of change.

The suite addresses critical process safety indicators that can be displayed per plant or unit level. Including the overdue action items, the percentage of SIF compliance versus the original design, the percentage of delayed proof tests, and the amount of bypasses exceeding the limits. These indicators can be presented as current values or in trend mode. From the same view, monitor the list of main alarms.

These dashboards provide easy monitoring of the process safety KPIs through clear and updated displays that can be understood by safety and non-safety experts, allowing for quick assessment and decision-making by operators and managers.

Comprehensive Suite of Applications for Enhanced Functional Safety and Data Integration

The suite contains different applications, that the end users can choose from depending on their requirements. The so far developed applications are Automated Proof Testing, SIF Performance Monitoring, as well as Operational SIL Monitoring, and Prior Use Monitoring supporting the Data Failure Management.

The suite is designed to act as a facilitator for executing functional safety activities or as a hub to integrate data from different tools on the same platform to provide a single source of truth. It also offers the option to work with any Safety Logic Solver (or historian) that supports OPC.

Benefits

- Reduced Human Error
- Automated FSM
- Visualize and Reduce Risk
- Minimizing Spurious Trips
- Enduring Compliance
- Optimized Plant Uptime
- Gap Closure
- FS Standardization

Main KPIs

- Overdue action items
- Percentage of non compliant SIF
- Bypass exceeding limit
- Overdue proof tests

Services

- Digital Ready
- Consultation
- Engineering
- Training

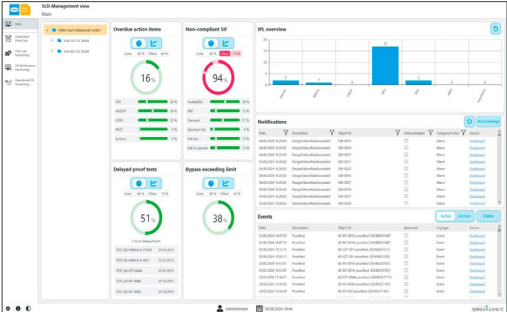


The applications suite at a glance

HIMA Safety Lifecycle Digitalization is a complete solution for a holistically digitalized safety environment. A comprehensive applications suite offers selectable tools to meet user requirements.

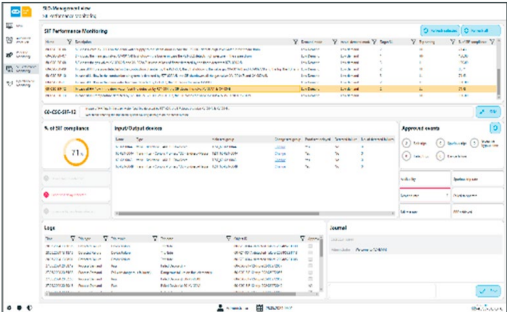
Main Dashboard

The Main Dashboard provides a quick and clear overview of the most important process safety KPIs as well as current events and notifications. It supports the operator in quickly assessing the general status of the plant and decision-making.



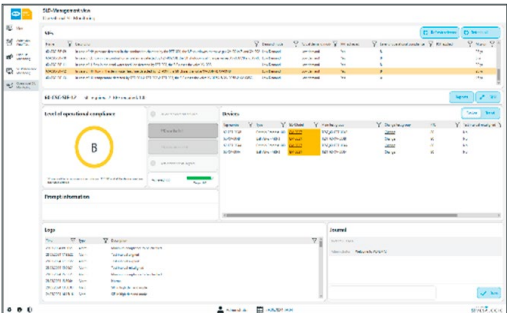
SIF Performance Monitoring

The application automates data collection and analysis of SIF data to derive actionable insights closing the loop between safety design specifications and current performances. This information is represented by comprehensible and accessible safety-relevant KPIs.



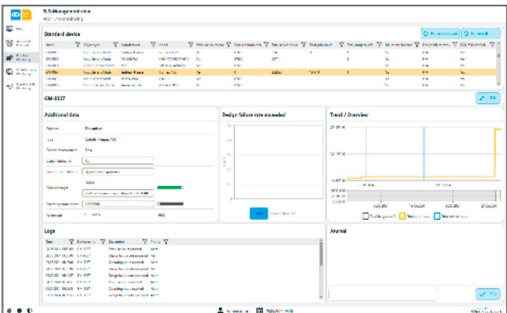
Failure Data Management: Operational SIL Monitoring

This application tracks the Safety Integrity Level (SIL) of safety functions, promptly identifying deviations from the design. This is important when using dynamic Probability of Failure on Demand (PFD) calculated with the operational failure rate. It also provides the operator with information on how to improve the safe functioning of the devices.



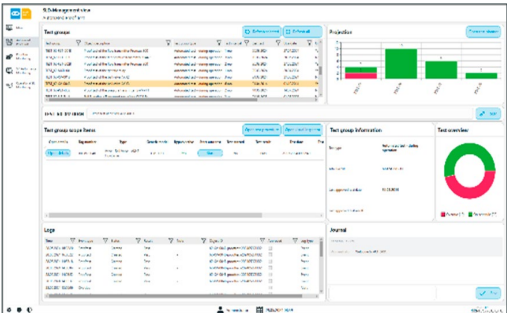
Failure Data Management: Prior Use Monitoring

Prior use monitoring introduces an easier way to monitor the collection of operational hours and the creation of failure rates for the standard devices used in safety applications by a specific user. It allows to demonstrate compliance with prior use principles and maintain it over time.



Automated Proof Testing

This application lists all executed, upcoming, and overdue tests and initiates them directly. It reduces manual intervention and ensures compliance with safety standards.



Why HIMA Safety Lifecycle Digitalization?

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Digital Ready

The HIMA Digitalization Excellence Team can provide consultation services to evaluate the existing infrastructure, identify the gaps, and recommend a plan for starting the digitalization journey.

Comprehensive Solution

The solution covers the whole lifecycle of any SIS according to the IEC 61511 from the feed to the operation and maintenance phase. It integrates data from different platforms into one source of truth. This is supported by consultation, training, data infrastructure, and cybersecurity solutions.

Functional Safety Experience

The digitalization journey requires extensive experience in the functional safety area. HIMA, with a team predominantly composed of certified FS engineers, supported by a team of FS experts, can guide you through this journey from the initial steps to achieving measurable milestones.

Data Security

As highlighted there is no safety without security in the digital era. That's why HIMA can integrate the suite into your cybersecurity system or provide it with a new one upon request.

Advanced PSI Layer

The HIMA solution provides operators, maintenance teams and the management with the most critical process safety performance indicators that need to be monitored and tracked for better decision making.

Open Integration

The application integrates with other tools automatically through API protocol, or semi-automatically through CSV files import/export if the other tools do not support API. OPC protocol is also utilized as an open protocol for communicating with any Safety Logic Solver (or historian).

Regulatory Concerns

To ensure the analysis is accurate and based on reliable calculations, HIMA is using SLM™ the only TÜV certified engineering tool. This facilitates the acceptance of the generated reports for auditing and assessment purposes.



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The suite of application is based on HIMA's holistic approach for the Digitalization of Functional Safety. The added value from the Digitalization of Functional Safety arises in four key areas:

Safety and Security

There is no safety without security, especially in a digitalized world where data security is mandatory to ensure continuity.

Our cybersecurity experts can consult you to integrate the solution within the existing cybersecurity system or to provide it along with a new cybersecurity system.

Enduring Compliance

Safety compliance is the overall target of all engineering activities around functional safety.

The suite utilizes the digitalization's benefits to close the loop between safety design specifications and current performances, use a dynamic probability of failure on demand (PFD), ensure proof testing compliance, and demonstrate compliance with prior use principles.

Streamline Engineering

The engineering processes for functional safety are one of the most important cost drivers.

The suite aims to optimize functional safety activities by automating some workstreams, reducing manual intervention.

Effective Management of Change

During the operation & maintenance phase, unwanted changes may happen that have a direct influence on safety performances. The suite enables for an easy identification of situations that require further investigation. On the other hand, when a change on the safety instrumented system is required, it would be possible to check the impact of these changes on the safety functions (including temporary changes like bypasses).

Would you like to learn more?

Please visit us online: www.hima.com

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