



COMPREHENSIVE COMPLIANCE WITH IEC 61511

IEC 61511 defines requirements regarding the application and Implementation of safety instrumented systems (SIS) in the process Industry. It describes functional safety (FS) requirements in process plants via a life cycle approach, from concept, through design, installation, operation, maintenance and decommissioning. Understanding and properly applying those regulations is essential not only for compliance, but more importantly for protecting people, assets and the environment.

IEC 61511 LIFECYCLE












Process Safety is defined as a disciplined framework for managing the Integrity of operating systems and processes handling hazardous substances through application of design principles, engineering, and operating practices. It aids in the prevention and control of Incidents that have the potential to release hazardous materials or energy. It is first introduced by OSHA and looks at all the processes involved in handling, using, storing, moving, or manufacturing highly hazardous chemicals.

SLM is the only **TÜV Rheinland** certified platform to **IEC 61508** and **61511 ed. 2**, designed to reduce your compliance burden.



Functional Safety
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IEC61511 CLAUSES	COMPLIANT SLM MODULES	
CLAUSE # 5 1. Management of Functional Safety 2. Audits and Assessments	 FUNCTIONAL SAFETY	 ACTION ITEM TRACKER
CLAUSE # 6 1. Safety Lifecycle Requirements	 <p>SLM connects all of the lifecycle phases from analysis through operate and maintain along with functional safety planning capabilities.</p>	
CLAUSE # 7 1. Verification	 <p>SLM comes complete with a library of interactive verification checklists with feedback which can be modified by the user and added to most objects.</p>	
CLAUSE # 8 1. Hazard and Risk Assessment	 HAZOP	<p>The Global module is used to create dynamic risk matrices which are used to calculate risk and LOPA results. The global module can also be used to generate HAZOP and LOPA templates to ensure consistency and efficiency.</p> <p>The HAZOP module is used to perform or to import HAZOP studies. Results are integrated with process equipment and LOPA studies. Users can see the Operate and Maintain health of IPLS and all of the studies associated with each piece of process equipment.</p>
CLAUSE # 9 1. Allocation of Protective Functions to Protection Layers	 LOPA	 BowTie
	 RISK SIL GRAPH	<p>The LOPA module is used to facilitate or import LOPA studies. Scenarios are integrated with process equipment, SRS objects and Operate and Maintain performance.</p> <p>Risk graph can be used as an alternative to LOPA for determining SIL requirements.</p> <p>The bowtie module can be used to graphically visualize risk scenarios with both preventive and consequence reduction protection layers. Each barrier/protection layer can be qualitatively assessed using build in checklists as demonstrated by MSS.</p>
CLAUSE # 10, 12 1. Safety Requirements Specification	 SIS	<p>The Instrumented Systems module can be used to document all IEC61511 specified Safety Requirements Specifications (SRS) along with other data. This module is also used to create detailed SIF, HIPS, Interlock and alarm models which are integrated with the operations and maintenance module and process equipment.</p>

IEC61511 CLAUSES

COMPLIANT SLM MODULES

CLAUSE # 11, 12

1. Design and engineering of safety instrumented system



SIS

The instrumented systems module is used to document design requirements for all instrumented protection layer functions.



NON-INSTRUMENTED

Non-instrumented and relief systems modules can be used to document design requirements for all non-instrumented protection layers.



OPERATE/
MAINTAIN

Operate and Maintain modules can be used to document detailed design requirements for devices (data sheet information).



FUNCTIONAL
SAFETY

The FSA module can be used to perform an FSA Phase 2 which assesses design compliance before proceeding with installation.



RELIEF SYSTEMS

Relief Systems module allows users to manage engineering data in one system.

CLAUSE # 13, 14, 15

1. Factory acceptance testing, installation and commissioning and safety validation of safety instrumented systems



OPERATE/
MAINTAIN

Operate and Maintain modules can be used to document detailed design requirements for devices (data sheet information).



FUNCTIONAL
SAFETY

The functional safety module (FSA) is used to assess and audit the completeness and effectiveness of testing and installations.

CLAUSE # 16

1. Operations and maintenance



OPERATE/
MAINTAIN

Operate and Maintain modules can be used to document detailed design requirements for devices (data sheet information).



FUNCTIONAL
SAFETY

The functional safety module (FSA) is used to assess and audit the completeness and effectiveness of testing and installations.

CLAUSE # 18

1. SIS Decommissioning



OPERATE/
MAINTAIN

The Operations and Maintain module is used to create change events including Out of service, Commissioned and Decommissioned, Replacement and Demolished with an association with an MOC study.

CLAUSE # 17

1. SIS Modification and Management of Change



The Operations and Maintain module is used to create change events including Out of service, Commissioned and Decommissioned, Replacement and Demolished with an association with an MOC study.

CLAUSE # 19

1. Information requirements



SLM includes automatic data verification, data import functionality, automatic revision tracking, user access restrictions, cyber security penetration protections, verification checklists, document linking and attachment and document management.