



Standards Brief  
IEC 61511 Edition 2

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# What Plant Operators Need to Know

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At a Glance

## What Is New in IEC 61511 Edition 2?

Your plant needs to be as productive as possible, with maximum availability. At the same time, you must minimize the safety risks at your plant. IEC 61511 defines functional safety in the process industry. The plant operator is responsible for implementing this standard. When the standard is complied with, it helps prevent unplanned downtime in production and offers legal certainty for potential liability cases resulting from an emergency. The second edition of IEC 61511 is a global standard that is already in force in many parts of the world. What changes does it contain?

### Now Compulsory



Functional safety analyses at all phases of the lifecycle



IT security risk assessment and measures



Safety plan



Safety handbook for operation and maintenance



Factory acceptance test



Skills management

### New Regulations



Process control systems as part of a risk-reducing protection layer



Hardware fault tolerance requirements



Distinction between the definition of 'proven in use' in IEC 61508 and IEC 61511



Safety instrumented systems: requirements relating to bypassing and necessary compensating measures



More detailed specification of the application program



Requirements for planning tests

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# Operation and Maintenance Requirements

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Operation and maintenance involve monitoring and upholding the performance of safety installations. This requires organizational and technical measures. For the people responsible for these tasks, this means that processes must be clearly defined and documented. Operators must be able to provide evidence of their measures and the qualifications of employees.



## Ensure Periodic Maintenance

The operation and maintenance processes of safety instrumented systems (SIS) must be developed according to the safety plan. This includes the routine methods and procedures that maintain the functional safety of the SIS. The people responsible have to adhere to the guidelines in the safety handbook. Maintenance must be carried out in accordance with the manufacturer's specifications, and may only be performed by qualified staff.



## Manage and Document Qualifications

There needs to be evidence that operation and maintenance personnel have been trained to ensure the full functionality of the SIS, both in terms of software and hardware. The people responsible for plant operation must provide evidence of qualifications – such as system training – and continuously renew them.



## Define a Precise List of Spare Parts

The standard stipulates that the necessary spare parts for the SIS are precisely defined. Replacement parts need to be available at all times to prevent a reduction in safety and minimize bypasses or downtime.

This requires the introduction of spare parts management. Critical spare parts should be prioritized.



## Documented Proof Tests

Edition 2 stipulates that proof tests must be carried out according to a documented procedure. This should help uncover undetected faults that would prevent the SIS from working in accordance with the safety requirements specification (SRS). When conducting proof tests, the people responsible are required to follow the guidelines in the safety and maintenance handbook.



## Regular Inspection

A regular visual inspection should be carried out on every SIS to ensure that there are no undesired changes or any noticeable deterioration.

This inspection needs to be conducted in accordance with the manufacturer's guidelines and by staff with the necessary qualifications. The people responsible have to keep a log



## Manage Modifications

Modifications may only be made to safety installations following an impact analysis and in accordance with a defined management of change (MOC) process. IEC 61511 stipulates that modifications have to be carried out by qualified personnel.

All employees that are affected should be informed of the change and be trained accordingly. This means that plant operators not only have to ensure that they can provide evidence of qualifications, but also that the qualifications are continuously renewed.





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# Functional Safety Management

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**An important change in IEC 61511 Edition 2 relates to functional safety management (FSM).**



Suppliers that use functional safety for their products and services must exhibit and conduct an additional management system for functional safety. The operator is responsible for requesting evidence of this.

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## What HIMA Offers You

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Plant operators can benefit from the expertise of an experienced partner. As a safety specialist with certified FSM expertise, HIMA not only offers standards-compliant safety solutions, but can also help plant operators simplify a wide range of processes related to the SIS lifecycle. For example, we support our customers with knowledge of safety standards, maintenance processes and documentation, employee qualifications, spare parts management, modifications, proof testing, verification, assessments, and audits.

**Do you have questions concerning functional safety management and HIMA services? Our service experts would be pleased to respond to your email or your call.**

**Please find your local contact here:**

[www.hima.com/en/products-services/safety-lifecycle-services](http://www.hima.com/en/products-services/safety-lifecycle-services)

### Benefits



**You reduce costs**



**You can confidently implement the changes in IEC 61511 Edition 2**



**Your teams work more efficiently**




**You stay on the safe side with certified FSM expertise**

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Want more information on functional safety management and all other safety services from HIMA? Then please visit us online:

 [www.hima.com/en/products-services/safety-lifecycle-services](http://www.hima.com/en/products-services/safety-lifecycle-services)

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