



What is Functional Safety?

Functional Safety is concerned with equipment failures that affect the safety of persons and/or the environment. IEC 61508 is concerned with electrical, electronic or programmable systems that perform safety functions.

Why Do You Need Functional Safety?

An approved system demonstrates your **legal responsibility** in regard to the use and supply of safety-related products, systems or services, wherever you are in the supply chain. In contracts and tendering situations, certification to IEC 61508 is either a **pre-requisite** or it can offer a **significant advantage** over the competition.

For manufacturers, certified products are more likely to extend **market penetration** and offer the potential of **increased sales growth**. The benefits of increased hardware and systematic integrity can also be seen in improved product quality – lower returns, field recalls, and improved levels of **customer satisfaction**.

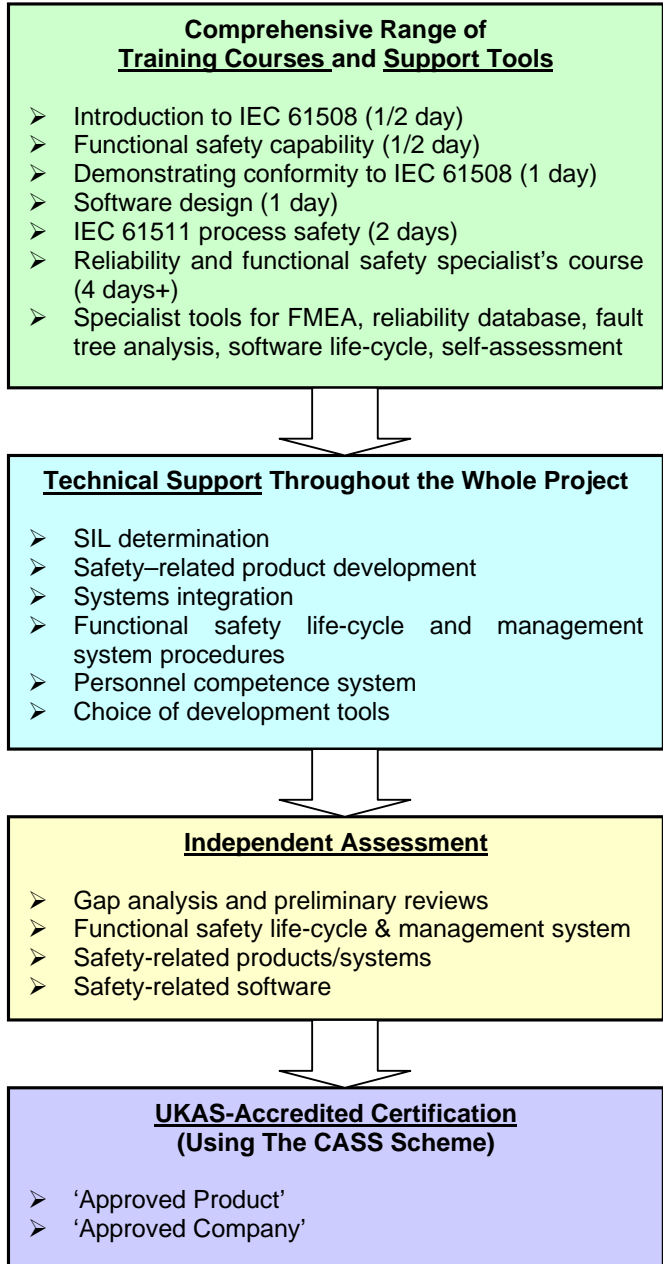


How Can Sira Help?

Sira was the first certification body in the world to be accredited for functional safety certification to IEC 61508. Sira's team of functional safety specialists has experience in many different industrial fields such as the process, machinery, railway and nuclear industries.

Sira **supports the whole supply chain**, from the user through to the development, integration and operation of safety-related systems, offering a **Total Compliance Solution** for all functional safety deliverables.

Sira offers the following services, to support **all organisations in the supply chain**:



For more details on Sira's range of functional safety services, log on to www.siracertification.com



Functional Safety and IEC 61508

Electrical, electronic or programmable systems that perform a safety function come under the scope of IEC 61508 (or related industry-specific standards). Examples would include safety systems for fire and/or gas detection, emergency shut down for process control, mechanical lifting or automation - in fact anything where, if the system failed, human injury/fatality or significant damage to the environment could result. Instruments such as sensors, controllers, monitors and valves that are intended for use in safety systems all fall within this scope.



Guidance Regarding Safety Integrity Levels

Four levels (SILs) of safety performance are specified for a safety function: SIL1 being the lowest and SIL4 the highest, according to the degree of risk that must be reduced. The SIL is an indication of the probability of failure of the safety function. Safety functions with higher SILs require more rigour in terms of the design, testing and methods used in the development.

Determination of which SIL is required is done after all the specific hazards have been identified and the associated risks quantified. Standard methods exist to identify, analyse and quantify hazards and risks (sometimes referred to as HAZID, HAZOP, etc.). Instruments used in safety-related systems must therefore be suitable for the SIL of the safety function and must comply with IEC 61508.

For more information regarding Sira's Functional Safety Services, please contact us:

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Key Responsibilities and Requirements

REGULATORY AUTHORITIES

The UK Health & Safety Executive (HSE) and other national regulators frequently use IEC 61508 (and related standards such as 61511, 62061, etc.) as a reference for determining whether the appropriate level of safety and due diligence has been achieved.

If you are a **PLANT OPERATOR** or **ENGINEERING CONTRACTOR** you should:

- identify hazards and quantify risks involved
- specify any safety functions and their SILs
- specify compliance to IEC 61508 a pre-requisite
- operate 61508-compliant processes and procedures
- have an independent functional safety assessment of the final system performed, prior to the hazard(s) being present

If you are an **SYSTEM INTEGRATOR** you should:

- use approved instruments with verified failure data
- specify the failure data and SIL-capability of the system (or sub-system)
- have an independent functional safety assessment of the safety system (or sub-system) performed
- operate 61508-compliant processes and procedures

If you are a **PRODUCT MANUFACTURER** you should:

- assess and publish the failure data, SIL-capability, etc. for the product
- have an independent functional safety assessment of the product performed
- operate 61508-complaint processes and procedures