

Provision of an IEC 61508 Edition 2 Compliant Safety Manual Safety Lead Competency Centre

Is your organisation working in the high hazard process industry? Is it providing functional safety products and/or services? Are you claiming compliance with IEC 61508 Ed 2 for your safety system products?

If the answer to these questions is a resounding YES, then are you aware that compliance with IEC 61508 Edition 2 also requires a Safety Manual for each 'compliant item'. The details are contained within IEC 61508 Ed 2 Parts 2 & 3 Annex D and it is important to recognise that this is a mandatory (normative) clause.

Why is this important and relevant to your business and operational model?

It is difficult to manage the dynamics of many safety supply chains because safety products, usually elements and subsystems, are sourced from many competing companies to support a global project. The technical input for design and engineering Safety Instrumented Systems and subsystems can be very complex. To tackle this issue, industry key players such as ABB and safety standard committees have stressed the need for more structure, coherence and justification within the safety data that is provided for components, elements and subsystems of a safety system. Rationalising the approach to safety data enables more effective and efficient design, integration and maintenance of the safety-instrumented systems. The result is a unified supply chain and greater certainty that functional safety can be achieved.

However, the implications of providing a compliant Safety Manual in terms of competency, technical attributes and a thorough understanding of the standard provides many challenges.



Historically, safety-related systems (frequently referred to as 'safety products') have come complete with a Safety Manual when such products also had a third-party certificate.

But the concept of a compliant item now extends to all those organisations in the supply chain viz, the product supplier (component, element in 61508 Ed 2 speak) the system integrator providing an individual sub system (input, logic solver, final element) or a complete safety instrumented system.

In order to back up any claims of compliance with IEC 61508 Ed 2 then, a Safety Manual is required for each compliant item, i.e. component, element, subsystem, system. This is irrespective whether or not the compliant item is certified because any claim relating to compliance should be accompanied by a Safety Manual. So in a complex safety project, many organisations may be required to provide a Safety Manual for their 'compliant item(s)'.

What needs to be provided?

Essentially the Safety Manual constitutes key documentation deliverables such as: FMEA's, proof test requirements, design documentation, hardware and systematic safety capability, recommended configurations, assumptions, competency expected of the individual and/or organisations to integrate the compliant item, to name a few!

How can ABB help?

ABB's extensive portfolio of certified safety systems has grown out of 30 years of experience of all high hazard industries. ABB has undertaken many assignments underpinning the essentials for the generation of Safety Manuals for compliant items across the globe. These range from specific activities such as failure mode and effects analysis, (FMEA), FMEDA, FMECA, prior use studies, assessment and categorisation of software tools, forwards and backwards traceability reviews, reviews of systematic safety integrity claims, including reviews of Safety Manuals for comprehensive IEC 61508 Ed 2 compliant functional safety management systems.

ABB provide independent assurance to endorse their client's contribution to functional safety by assuring their claims to compliance are supported by all necessary collateral.



Assured and certified products, services, delivery and execution.

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