

Process Functional Safety

Safety engineering and consultancy services to the Oil and Gas, Petrochemical, and other process industries

Capabilities

- Functional Safety Management Systems
- Hazard and Operability (HAZOP) Study
- Safety Integrity Level (SIL) Targeting
- SIL Assessment
- Product Certification
- Quantified Risk Assessment (QRA)
- Dispersion Modeling / Consequence Analysis
- General Reliability / Availability Studies
- Functional Safety Training



Rockwell Automation Functional Safety Services

New safety standards take into consideration much more than just machine or process functionality. As safety legislation evolves, standards have been developed to assist the industry in achieving not only compliance, but also allowing manufacturers to achieve productivity and flexibility...safely. Safety and productivity are no longer mutually exclusive goals.

Utilizing the contemporary technologies and experience in automation from Rockwell Automation, you can be confident that the solutions you adopt will be productive, flexible, compliant and cost effective.

Rockwell Automation has a global safety team of principal consultants to assist end users, integrators and OEMs at any step of the functional safety elements of a project – from training and standards assistance through validation and startup. We offer functional safety services for both machine and process safety.

We'll help you achieve your functional safety targets for the entire process, while helping to maintain your productivity goals.

For more information contact your local Rockwell Automation sales office or email us at:
ProcessSafety@ra.rockwell.com

Learn more online at:
<http://www.rockwellautomation.com/industries/oilgas/>

LISTEN.
THINK.
SOLVE.®

Functional Safety Management Systems

We can implement third party audits and assist in the development of procedures and techniques that comply with recognized safety standards including IEC61508 and IEC61511.

Hazard and Operability (HAZOP) Study

We have experienced facilitators, scribes and specialist support for HAZOPs to be carried out in your offices. We can achieve a process that is clear, fully recorded and traceable, while directing the discussion and allowing adequate time for effective hazard identification and evaluation.

Safety Integrity Level (SIL) Targeting

Using our database of reliability data for all types of components and subsystems, the output of the HAZOP studies can be quantitatively analyzed, typically using Layer of Protection Analysis (LOPA) or Risk Graph techniques. Each method can be used in SIL targeting and can be calibrated to your specific risk criteria.

SIL Assessment

We have extensive experience in providing SIL Assessments of Safety-Instrumented Functions against the SIL targets, in accordance with IEC61508 and IEC61511. Fault Tree Analysis (FTA) or Reliability Block Diagram (RBD) techniques, quantified with traceable data, are used to determine the hardware reliability, in terms of probability of failure on demand / failure rate, and compliance to architectural, fault tolerance and diagnostic constraints.

Product Certification

Our broad experience of product certification (up to and including SIL3) include a number of sensors and logic solvers from suppliers in Europe and the USA. Certification requires a detailed study of the development lifecycle of the product and its reliability. The study will be fully documented and a SIL Certificate provided if appropriate, stating its applicable SIL category and any restrictions on use in a SIL-rated safety-instrumented function.

Quantified Risk Assessment (QRA)

A Quantified Risk Assessment provides a methodical approach to identifying and understanding the risks associated with potentially hazardous activities in the industry. A QRA can assess the risks posed to workers, members of the public, the environment and the business or asset itself. We have experience in carrying out assessments which include: Initiating Likelihood and Hazard Frequency Analysis, Scenario Development using Event Tree Analysis, Consequence Analysis, Risk Assessment and Cost Benefit Analysis.

Dispersion Modeling / Consequence Analysis

Our consultants use DNV (Det Norske Veritas) Software PHAST (Process Hazard Analysis Software Tool) to evaluate the dispersion of a liquid, gaseous and two-phase release from a pipeline or vessel. Dispersion modeling allows the progress of flammable and toxic materials (from the initial loss of containment event to far-field consequences) to be examined, and the probability of fatality to be calculated. Dispersion profiles are plotted on maps showing concentration contours across the site.

General Reliability / Availability Studies

We have extensive experience and support data to evaluate the effects of component / module failures to optimize system design for availability, minimizing impact on production, revenue earning capability, security of supply and on the reputation of the company.

Functional Safety Training

We offer training in IEC61508 and IEC61511. Take advantage of our one-day awareness course or three-day advanced course in functional safety.



Rockwell Automation is an official ENERGY STAR® Industrial Service and Product Provider. It has proven it provides energy efficiency services and/or products to commercial buildings and industrial manufacturing plants in the United States by collaborating with an ENERGY STAR Industrial Partner to submit a teaming profile that outlines the scope and resulting savings from energy efficiency-driven projects. For more information, visit ENERGY STAR for Industry at www.energystar.gov/index.cfm?c=industry.bus_industry

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