

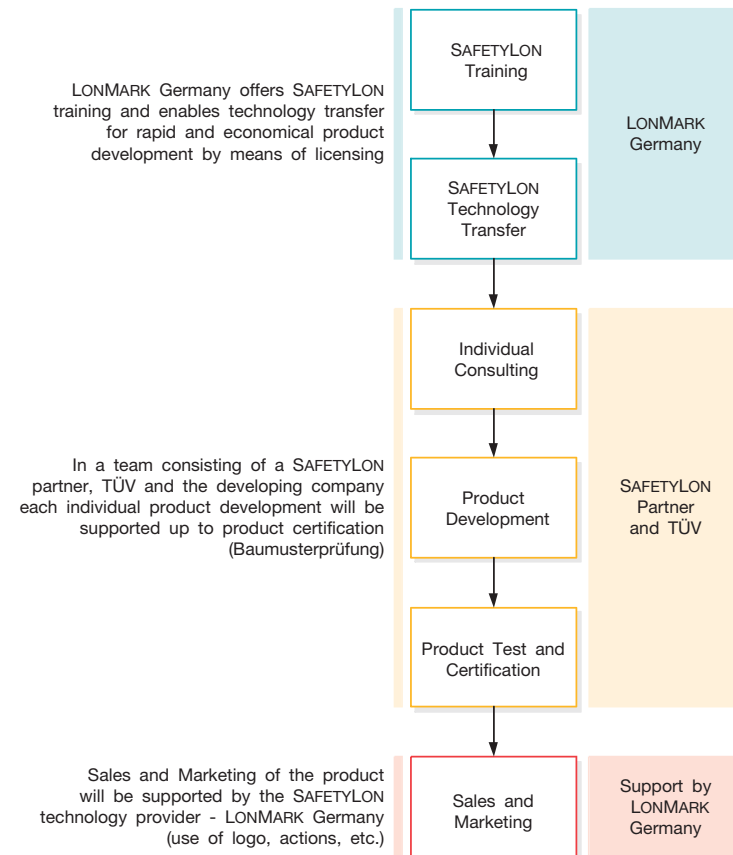
Safe Applications in Industrial Automation

In industry safe methods and techniques play a very important role. It is therefore evident that in the field of machine controls a number of electronic safety systems have been developed, which were approved and certified by the German Technical Inspection Service (Technischer Überwachungsverein or TÜV). In contrast, SAFETYLON concentrates on process control and process automation.

SAFETYLON enables and facilitates the safe collection, processing and visualization of fault and alarm data in power plants, refineries and other process industries. In case of error or malfunction the fundamental requirements of IEC 61508 are satisfied since the controls will lock the system in a safe state. In addition, SAFETYLON supports the concept of a safe scenario by which several subsystems will each be transferred into a safe state, either event driven or in a predefined time sequence. The physical network may, of course, be implemented by one or several media such as TCP/IP, Twisted Pair and Power Line.

Production plants can also be equipped with SAFETYLON, whereby process and building automation can be merged and integrated. An example is a fire protection application in a manufacturing plant. Integrated Safety Technology - an outstanding feature of SAFETYLON.

How can you implement SAFETYLON?



Further information:

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LON[®] goes safe
From idea to solution.



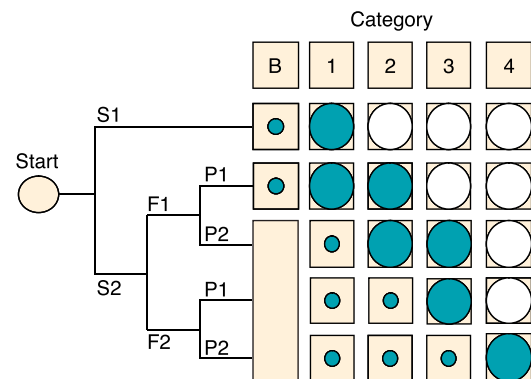
IEC 61508 – The Standard for Safety Technology

Hazardous breakdowns or malfunctions of industrial process equipment or machines may lead to risks for people, environment and material goods. By using a risk analysis method in accordance with IEC 61508 measures can be taken by means of avoidance, recognition and control of failures.

In the event, that the risk reduction is performed by programmable electronic systems, all embedded components must comply with the requirements of the international standard IEC 61508. This standard is recognized as the “accepted state of the art” and must be followed for reasons of liability by all manufacturers and service providers who produce, install and maintain systems with safety related functions.

Depending on the risk assessment in a particular situation one out of four Safety Integrity Levels will be applied: SIL1 (lowest risk) and SIL4 (very high risk). The higher the risk, the higher are the requirements for reducing the risk and the demands on the mechanical and electronic components and subsystems.

SAFETYLON can be used for SIL1 up to SIL3 systems and, in special applications, up to SIL4, and hence fully covers the requirements of IEC61508.



How Does SAFETYLON Work?

From the very beginning it was an important requirement that SAFETYLON should function as a partial system or subsystem in a LON building network. This is of advantage because SAFETYLON can operate via the same wires and the same network infrastructure, for example with conventional routers and IP routers, without any additional costs. This way it is possible that safe and non-safe subnetworks will not only coexist, but can fully cooperate with each other. Every single device can process safe and non-safe functions, objects and data points simultaneously. This feature can be achieved by implementing safe data objects in a similar format as LONMARK® interoperable data objects (SNVTs). In contrast, however, any transmission errors of safe data objects will be detected with (nearly) absolute certainty. Think of it as “redundant” data transmission via separate safe “transmission channels” including data integrity checking of each individual message.

The EU Collective Research Project SAFETYLON

In order to combine safe – as defined by the international norm IEC 61508 – and non-safe applications in Building Automation and in other technical systems an EU funded research project designated SAFETYLON was submitted and awarded in 2005 within the 6th European Collective Research program (FP6). The objective of the project is to specify and implement a technical solution based on the standard LON networking technology, and market this solution with the help of European LON User Organizations. The project is carried out by 17 European partners who are collaborating on the specification, design and implementation of the SAFETYLON hardware and software. Further, the partners will build a series of devices for safe building automation applications. Companies who are interested in participating in the exploitation of the SAFETYLON-technology may license its use through either LONMARK Deutschland e.V., the Polish User Organization (PLUG) or LONMARK Sweden. The project is scheduled to be completed in November 2007.

Safe Applications in Building Automation

Fire has always been a sudden and unpredictable event feared by man. In case of fire the fire fighters and rescue parties give their very best and are typically very well equipped to act fast and efficiently. But also the technical systems in a building are a challenge in this case.

The market today provides safe fire protection and alarming systems in accordance with IEC 61508. But these are, as a rule, totally separated from the other building automation systems. This situation shall now be changed with SAFETYLON: safe and non-safe subsystems are able to communicate via the same LON network in an event oriented fashion such that a fire arising from anywhere in the building will be detected with a “probability reaching absolute certainty”. And immediately all, really all subsystems can react to the extraordinary event in the most flexible way: alarm system, escape path illumination, elevators, smoke exhaust ventilation, and even the locking and unlocking of doors. Integrated fire protection – a real innovation with SAFETYLON.

