Why functional safety without cybersecurity is no longer possible.

In the manufacturing industry.

Digitalization in production automation is steadily increasing. Automated Functionalities must keep pace with new industrial IoT technologies in order to make production systems flexible and production processes more effective. Cloud-based data processing and novel machine learning methods are the state of the art. IT and OT (Operational Technology) security play a key role in the technical networking of data. These changes in the market require rethinking for many companies, because cybersecurity is thus becoming an integral part of functional safety. Only if a production plant is "safe", it can also be "secure".

CHANGES

- More complex technologies, e.g. Artificial Intelligence (AI)
- Networked controllers of machines
- Making production more flexible
- Technical and organizational convergence of OT and IT
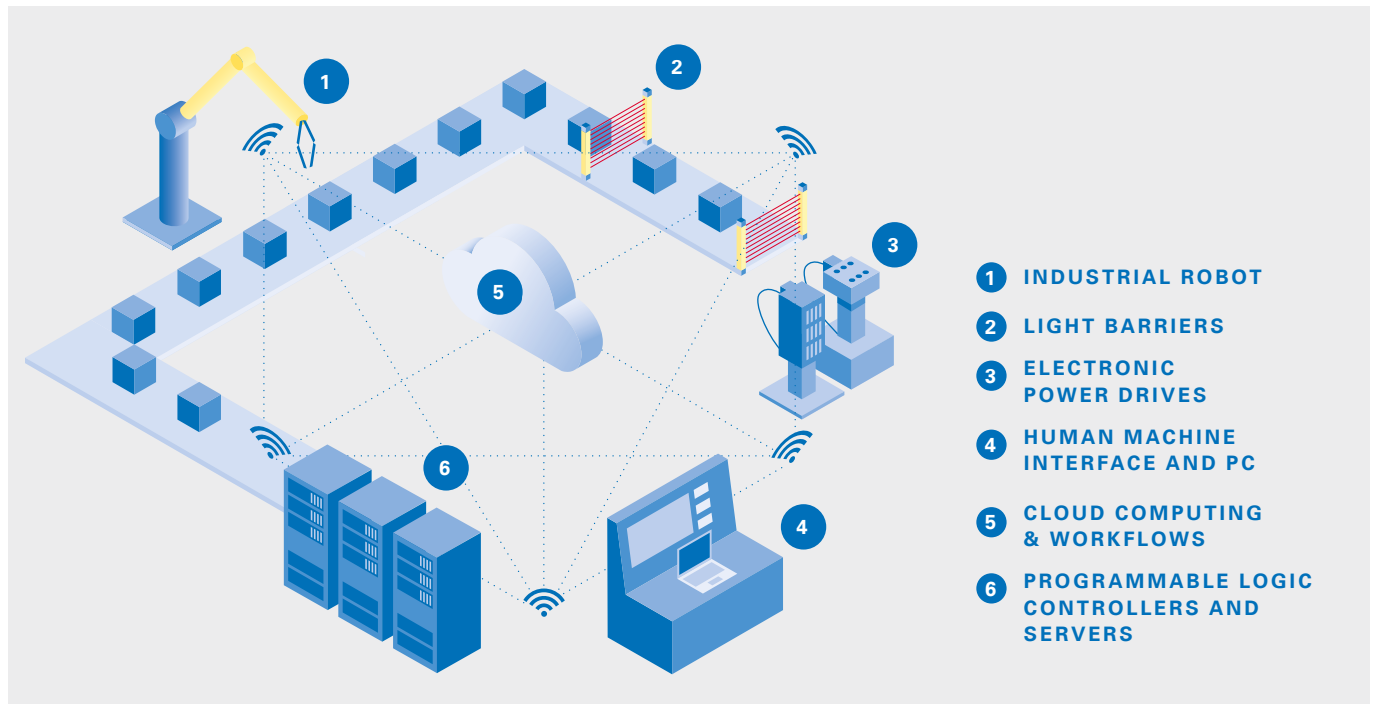- Processes are digitized and moved to the cloud

RISKS AND DANGERS

- Hurting people, pollution of the environment and loss of production
- Unintentional, unauthorized or malicious interference with the IT/OT systems
- Malfunctions of machines and facilities
- Manipulation of control and processing systems
- Manipulation of sensors

PROTECTIVE MEASURES

- Risk assessment with regard to functional safety and cybersecurity
- IT / OT security analysis, in order to identify security vulnerabilities
- Testing for functional safety of machines and penetration tests before commissioning
- Continuous monitoring of systems in operation

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FUNCTIONAL SAFETY AND CYBERSECURITY TOUCHPOINTS WITHIN THE MANUFACTURING

1. **INDUSTRIAL ROBOT**
2. **LIGHT BARRIERS**
3. **ELECTRONIC POWER DRIVES**
4. **HUMAN MACHINE INTERFACE AND PC**
5. **CLOUD COMPUTING & WORKFLOWS**
6. **PROGRAMMABLE LOGIC CONTROLLERS AND SERVERS**

INTERNATIONAL STANDARDS, NORMS AND GUIDELINES.

A large number of relevant standards and norms define safety requirements that operators of a plant, manufacturers of machines as well as system integrators of safety-related components and systems must fulfil. These standards are valid and recommended worldwide.

For functional safety and cybersecurity aspects, the following standards are relevant:

WORLDWIDE
- IEC 62061
- ISO 13849
- ISO 27001
- IEC 62443

EUROPE-WIDE
- EU Machinery Directive
- NIS Directive
- EU Cybersecurity Act
- GDPR

GERMANY-WIDE
- Product Safety Act (ProdSG)
- IT Security Act
- DSGVO

ENSURING THE SECURITY OF THE FUTURE TODAY.

New and smart technologies require expert knowledge. With our topic-specific trainings for functional safety and cybersecurity, you can further train your employees as FS Engineer (TÜV Rheinland) or Cybersecurity Specialist (TÜV Rheinland) with corresponding certificates.

RETHINK AND ACT DECISIVELY.

As the world's leading testing service provider and consultant in functional safety and cybersecurity we offer machine manufacturers, system integrators and plant operators a broad portfolio of services. Our experts analyze all aspects of functional safety and cybersecurity along the entire life cycle of your product, system or plant - from the concept through realization to commissioning and maintenance. Let us stand together today for the safety of tomorrow.

Contact us for your individual IT/OT security analysis.

ONLINE CONTACT

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