



RANGE OF SERVICES

FUNCTIONAL SAFETY

**TRAINING – PERSONAL QUALIFICATION – CONSULTANCY
SAFETY ANALYTICS – TESTING – CERTIFICATION**

PROFIT FROM THE NAME AND KNOW-HOW OF THE WORLD'S LEADING PROVIDER OF TESTING SERVICES, SGS, AS WELL AS FROM THE OUTSTANDING ACCEPTANCE OF THE TÜV BRAND IN A SINGLE UNIT.

NEW SYSTEM DEVELOPMENTS ACROSS VARIOUS INDUSTRIES ARE BECOMING INCREASINGLY COMPLEX. THIS LEADS TO CONSISTENTLY GROWING DEMANDS BEING MADE ON MANUFACTURERS AND THEIR SUPPLIERS, PARTICULARLY WHEN SAFETY-RELEVANT FUNCTIONS ARE INVOLVED.

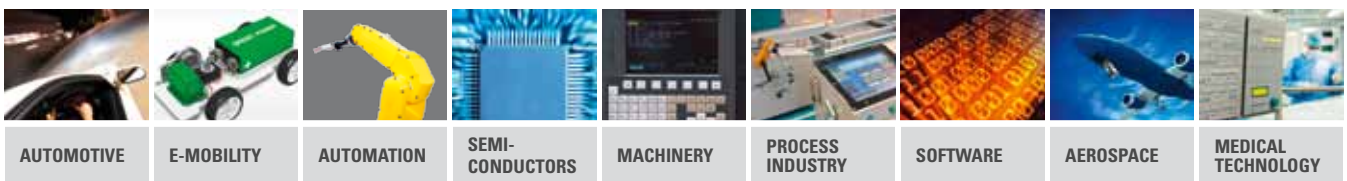
The reduction of potential safety risks is an essential element of the entire safety lifecycle, from the concept phase and development all the way to putting the product or system out of service. To achieve the requisite product safety and to prevent potential product liability claims, developments should be based on state-of-the-art technology, with respect to standards for example. The Functional Safety of relevant products, systems and processes must be ensured.

WE SUPPORT YOU IN THESE AREAS

We methodically support developments to ensure overall system safety and apply Functional Safety standards like IEC 61508 and ISO 26262 for example.

SGS-TÜV GmbH – ein Unternehmen der SGS-Gruppe und des TÜV Saarland e. V. – hereinafter SGS-TÜV Saar – with more than 67,000 employees, through its Functional Safety Global Competence Center offers you comprehensive support e. g. in the following industrial sectors

- Automotive
- E-mobility
- Automation
- Semiconductors
- Machinery
- Process Industry
- Software
- Aerospace
- Medical Technology



Use our service portfolio to accompany you on your way to a safe product. It encompasses a wide range of training offers, consultancy regarding all the standards relevant to Functional Safety, testing and certification of your products and processes including the requisite assessments and audits as well as methodical support for safety analytics.

- Training & Personal qualification
- Consultancy
- Safety Analytics
- Testing/Certifications

ACCREDITATION/NOTIFIED BODY

According to ISO/IEC 17025 we are also accredited with respect to Functional Safety. Therefore, we are authorized to test and certify according to international safety standards. This means we help to secure your product against product liability claims. In addition, SGS-TÜV Saar is listed as a Notified Body for Machinery in the European Union.

STANDARDIZATION ACTIVITIES

Experts from the Functional Safety Global Competence Center are members of the relevant standardization committees. This means we help to shape the further development of the state of science and technology for standardization.

FUNDED PROJECTS

In addition, we closely cooperate with research institutes and government authorities within the scope of funded projects.



TRAINING & PERSONAL QUALIFICATION

A GOOD RETURN ON INVESTMENT

The technical expertise of its employees is an important element of a company's competitiveness.

ENSURE YOUR COMPETITIVENESS BY INVESTING IN THE KNOW-HOW OF YOUR EMPLOYEES

Our highly qualified Functional Safety trainer team is your expert partner for company-specific training of specialists and managers. We draw on many years of extensive experience in the field of Functional Safety.

Therefore, we offer user oriented seminars for all relevant standards – from open training sessions on scheduled dates (see www.sgs-tuv-saar.com/fs-training) to in-house training considering the specific requirements of your organization.



The portfolio covers a wide range of topics, from the generic review of Functional Safety (IEC 61508) all the way through specific fields of application such as Automotive (ISO 26262), Automation (ISO 13849/IEC 62061) and Process Industry (IEC 61511) to Aerospace (DO 178-b/DO 254), legal aspects and procedure for mechanic components.

The modular design of the open seminars allows you to tailor a training programme to suit your specific needs. The various training contents address beginners as well as experts who wish to refresh and update their existing knowledge. The training seminars provide detailed insights into the field of Functional Safety combined with descriptive case studies, in our AFSP-respectively IFSP-training weeks with consistent examples.

WE WILL BE PLEASED TO OFFER YOU WORKSHOPS ON YOUR TOPICS OF CHOICE AT ANY DESIRED LEVEL OF DEPTH.

Furthermore we offer personal qualification including exam to become an AFSP (Automotive Functional Safety Professional), AFSE (Automotive Functional Safety Expert), IFSP (Industrial Functional Safety Professional) or IFSE (Industrial Functional Safety Expert).

Our training and personal qualification is offered worldwide.

Actual places and dates:

www.sgs-tuv-saar.com/fs-training

TRAINING

SAVE TIME AND COSTS. WE SUPPORT YOU IN DEVELOPING AND OPTIMIZING CONCEPTS, PRODUCTS AND PROCESSES.

CONSULTANCY

CONSULTANCY

The controllability of the fault potential of complex safety-relevant systems requires a stringent approach during development. In addition to development know-how, it is particularly important to generate complementary safety processes and to integrate them into the project structure as well as with organizational culture.

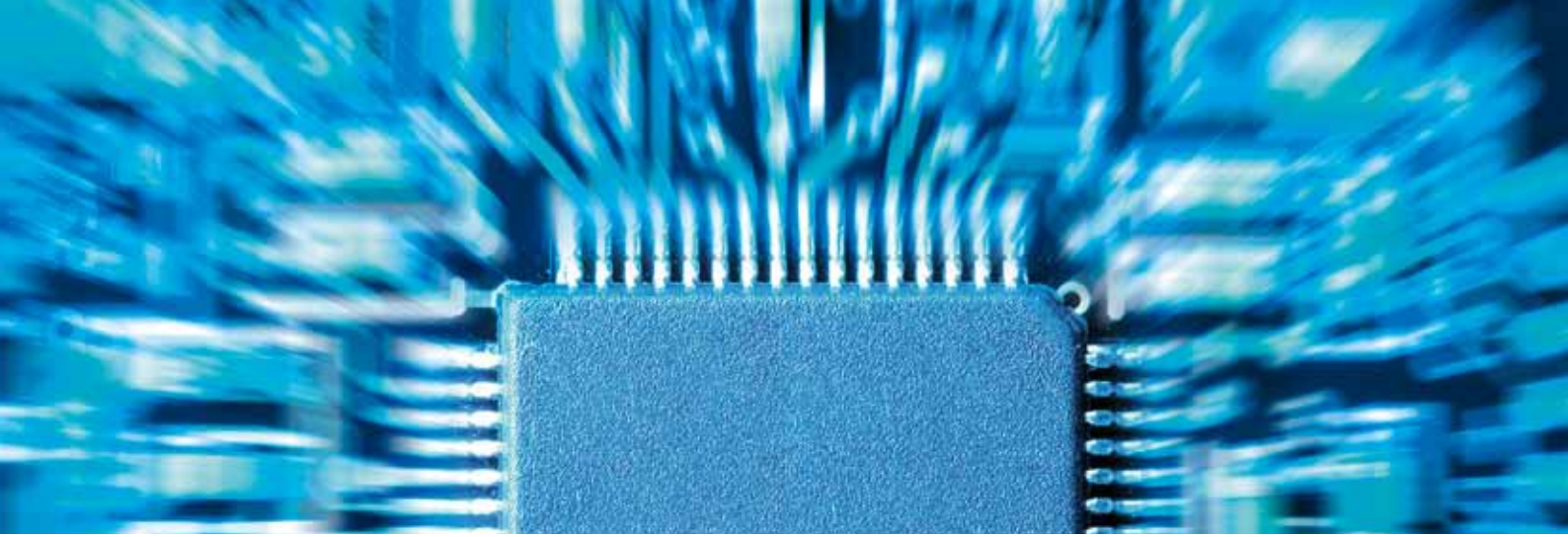
Our consultancy services encompass the full scope of Functional Safety. Our portfolio extends across all phases of the development cycle, from concept all the way to production and, ultimately, putting products and systems out of service again. We offer you support in developing process and organizational structures (FSM) and with respect to hardware, software and system development all the way up to integration into the overall product – in other words across the entire safety lifecycle.

You benefit from the expertise and years of experience of our consultancy team and the know-how of our specialists in the various industrial sectors such as

Automotive, Automation, Machinery, Software, Semiconductors and Aerospace in areas like

- Implementation of safety requirements into existing development processes
- Safety management
- Elaboration of safety concepts and systems
- Interface management, system owner/supplier





SAFETY ANALYTICS

The performance of safety analyses is essential to the development of a safety-relevant system. They make valuable results available for the entire development process. The identification of faults and their root causes as well as potential weak areas and their effects on the safety objective are examples of such results. Our analytics experts will support you with relevant know-how and methodologies.

The analysis method to be used is selected in terms of its suitability to provide the optimum analysis results for the specific project and adapted accordingly. This allows the special characteristics of the system in the various phases of the safety lifecycle to be adequately addressed. We support you in any aspect of safety analysis.

METHODOLOGIES WE CAN USE TO SUPPORT YOU INCLUDE

- FMEA (Failure Mode and Effects Analysis)
- FTA (Failure Tree Analysis)
- Markov Analysis
- HAZOP Analysis
- ETA (Event Tree Analysis)
- RBD (Reliability Block Diagram)



ANALYTICS

EXTENSIVE EXPERT KNOW-HOW AND A GLOBAL NETWORK FOR THE SAFETY OF YOUR PRODUCTS.

TESTING

TESTING/CERTIFICATIONS

As an accredited testing body for Functional Safety, we evaluate your concepts, systems, products and processes in the field of Functional Safety for you.

In addition to concept reports and technical reports, we issue certificates and test marks if required. You profit from strong brands in a single unit.

IN THE AREA OF TESTING AND CERTIFICATIONS WE OFFER YOU SERVICES AT ALL LEVELS

- Evaluation of systems
- Evaluation of software
- Qualification of software based development tools
- Evaluation of hardware
- Safety assessments and audits
- Certification of components, systems and processes
- Certification according to the Machinery Directive 2006/42/EC





YOUR BENEFITS AT A GLANCE

■ SERVICE FROM A ONE-STOP-SHOP

As a full-service provider, we support you in developing and testing your products (full systems, sub-systems, software, semiconductors etc.) and processes for optimal acceptance and product validation in international markets.

■ THE WORLD'S LEADING TEST SERVICES PROVIDER

SGS, the world's leading test services provider founded SGS-TÜV Saar together with TÜV Saarland e. V. You benefit in any case from the know-how and image of the companies taking part in this joint venture in local and international markets.

■ PROTECTION AGAINST PRODUCT LIABILITY CLAIMS

Based on our accreditation for safety engineering according to ISO/IEC 17025 we protect you against product liability claims if required.

■ GLOBAL EXPERTISE FOR FUNCTIONAL SAFETY

We serve you locally and globally with our Global Competence Center and several local expert teams for Functional Safety.

Global Competence Center
Functional Safety

SGS-TÜV GmbH
Ein Unternehmen der SGS-Gruppe und
des TÜV Saarland e.V.

Hofmannstr. 50
D-81379 München
Germany
t +49 89 787475 – 271
f +49 89 787475 – 217

fs@sgs.com
www.sgs-tuv-saar.com/fs

Local contacts for Functional Safety

China t +86 13916013062
cn.fs@sgs.com

India t +91 124 60600747
in.fs@sgs.com

Japan t +81 45 3305040
jp.fs@sgs.com

Korea t +82 31 240 6611
kr.fs@sgs.com

Taiwan t +886 2 2299 3279 3660
tw.fs@sgs.com

United Kingdom t +44 191 377 2000
uk.fs@sgs.com

USA t +1 973 461-7932
us.fs@sgs.com

SGS IS THE WORLD'S LEADING INSPECTION, VERIFICATION, TESTING AND CERTIFICATION COMPANY. SGS IS RECOGNISED AS THE GLOBAL BENCHMARK FOR QUALITY AND INTEGRITY. WITH MORE THAN 67,000 EMPLOYEES, SGS OPERATES A NETWORK OF OVER 1,250 OFFICES AND LABORATORIES AROUND THE WORLD.

BENEFITS

WWW.SGS-TUEV-SAAR.COM

WHEN YOU NEED TO BE SURE

