

FUNCTIONAL SAFETY INDUSTRIAL

TRAINING AND PERSONAL QUALIFICATION

**PUBLIC TRAININGS, IN-HOUSE SEMINARS,
PERSONAL CERTIFICATES, WEBINARS**

IEC 61508 | ISO 13849 | IEC 62061 | IEC 61511 | ISO 25119 | IEC 60730 | IEC 60335



THE SGS GROUP

is the leader in the fields of testing, verification and certification with 70,000 employees worldwide. Founded in 1878, SGS headquartered in Geneva has been setting benchmarks for top standards that are recognized around the world. Since 1920 SGS has been active in Germany.

SGS-TÜV SAAR GMBH

as a joint venture between SGS and TÜV Saarland e.V. supports you in all matters relating to Functional Safety. As an accredited services provider, we are active in the areas of training, consultancy, safety analytics, testing and certification. We define ourselves as your global business partner along the entire value chain.

THE EXPERTS

of SGS-TÜV Saar actively participate as members of the relevant standardization bodies. Therefore, we are consistently involved in the further development of the state of science and technology and are able to provide our customers with comprehensive consultancy and training in this field.

IEC 61508



Automation
Software
Semiconductors

ISO 13849 | IEC 62061



Machine safety

ISO 25119



Agricultural
and forestry
machinery

IEC 61511



Process
industry

IEC 60730 | IEC 60335 -1



Household
appliances etc.

FUNCTIONAL SAFETY

At SGS-TÜV Saar, we concentrate all of our activities relating to Functional Safety in our Functional Safety Competence Center. This also includes all training activities. As SGS-TÜV Saar, we are active in various industries with our experts. As a result, we have a complete overview of existing training needs and know-how to optimally convey Functional Safety knowledge to our customers.

We offer a broad portfolio of training activities. They are primarily oriented to relevant standards such as the basic standard IEC 61508 (2nd Edition). From automation and various machinery applications, from the process industry to household appliances, through to

software and semiconductors, we train you and your staff on all relevant topics revolving around Functional Safety.

WE HAVE COMPILED OUR TRAININGS FOR THE AUTOMOTIVE INDUSTRY IN A SEPARATE BROCHURE AS OUR TRAINING PORTFOLIO SPECIFICALLY FOR THIS SECTOR IS PARTICULARLY EXTENSIVE. DOWNLOAD AT WWW.SGS-TUV-SAAR.COM/FS-TRAINING

YOUR TEAM OF TRAINERS

The trainer team is led by Marcus Rau, Head of Functional Training Safety at SGS-TÜV Saar.

He previously worked as a team leader and training manager for Functional Safety at another TÜV organization for eight years.

Before, Marcus Rau had gathered more than ten years of practical safety experience as a planning engineer and Technical Representative for Functional Safety at Linde Engineering. He is a member of German Standardization Bodies.

Marcus Rau is supported by a team of experienced trainers. Every one of them draws on many years of experience in how to put Functional Safety requirements into practice.



Marcus Rau, Head of Training



TRAINING CATEGORIES AND TARGET GROUPS

Every one of our training modules is tailored exactly to the needs of the target group and conveys the specific contents. Our offering ranges from 2- to 3-hour introductory sessions primarily addressing decision makers through to special modules for hardware and software developers. In addition, our experts are able to develop workshops for your individual topics of interest from which you benefit in your day-to-day work, which is a key advantage in view of consistently increasing time and cost pressures.

AT SGS-TÜV SAAR, WE EXCLUSIVELY USE TRAINERS WHO DRAW ON MANY YEARS OF EXPERIENCE IN THEIR SUBJECT AREA AND WHO HAVE PREVIOUSLY SUPPORTED OR ARE CURRENTLY SUPPORTING RELEVANT PROJECTS.

		Target groups				
		MANAGERS PROJECT LEADERS	SAFETY MANAGERS	SYSTEM DEVELOPERS	SOFTWARE DEVELOPERS	HARDWARE DEVELOPERS
Training categories	INTRODUCTION	■	■			
	OVERVIEW OF STANDARDS	■	■	■	■	■
	FUNCTIONAL SAFETY MANAGEMENT (FSM)	■	■			
	CONCEPT		■	■		
	SOFTWARE		■		■	
	HARDWARE		■			■
	ANALYTICS		■	■	■	■
	SPECIAL TOPICS			■	■	■



TRAINING VARIANTS

You have the choice between four variants for your individual training.

■ VARIANT 1

You join us in Munich or at another specified training location, stay at a first-class hotel and can fully concentrate on the training. Of course we will create an atmosphere that will make you feel comfortable throughout your stay.

■ VARIANT 2

You have our trainers travel to a location of your choice such as your company. This gives you the benefits of saving travel costs for your staff and staying within a closed circle that will allow you to discuss companyinternal topics as well.

■ VARIANT 3

This is an extension of Variant 2 where you specify the training contents yourself. To enable you to make a targeted selection we will provide you with an overview of the sub-modules of our trainings. Alternatively, you just let us know your issue relating to Functional Safety and we will develop a tailor-made workshop for you.

■ VARIANT 4

We offer webinars on fixed dates, where you can participate for free after the registration.

Training variants				
	VARIANT 1	VARIANT 2	VARIANT 3	VARIANT 4
DESCRIPTION	Public trainings (in German language)	In-house Module trainings (standard modules)	In-house Customized trainings (compiled from standard modules)	Webinars (Online training)
DATES	On scheduled dates (registration at www.sgs-tuv-saar.com/fs-training)	Subject to coordination	Subject to coordination	On fixed dates (Registration at www.sgs-tuv-saar.com/fs-training)
PLACE	Munich (for others, see info at www.sgs-tuv-saar.com/fs-training)	Subject to coordination	Subject to coordination	Online



TRAININGS ON AUTOMATION, SOFTWARE, SEMICONDUCTORS

Our trainings for the automation industry are based on IEC 61508 2nd Ed. The training portfolio encompasses modules for any user profile, from company managers through to safety managers or analytical engineers. In view of the partially complex contents of the standard our trainers will treat the subject by using examples from the field and provide you with a clear, easy-to-understand interpretation of the standard. We will be pleased to include concrete focal topics of Functional Safety relating to your field of business in customized training programmes. Our training activities also address companies in the semiconductor and software tool industries and cover their training requirements irrespective of the sector.

	Trainings on Automation, Software, Semiconductors						
	INTRODUCTION	OVERVIEW OF STANDARDS	CONCEPT DEVELOPMENT	HARDWARE DEVELOPMENT	SOFTWARE DEVELOPMENT	ANALYTICS	MECHANICS
CODE	A0	A1	A2	A3	A4	A5	AMP1
TITLE	The Functional Safety challenge in the automation industry	Overview of requirements according to IEC 61508	From risk analysis to system concept	Safety-oriented hardware development	Safety-oriented software development	Methodical approach to safety analysis	Evaluation of mechanical/mechatronic systems in the context of Functional Safety
SUB-TITLE	Core statements of IEC 61508			Acc. to IEC 61508-2	Acc. to IEC 61508-3		
DURATION	1.5 hours	1 day	1 day	1 day	1 day	1 day	1 day
TARGET GROUP	Decision makers (management) and all FS prospective	All personnel involved in FS	Safety managers, project managers, function developers	Safety managers, hardware developers	Safety managers, software developers	Safety managers, analytical engineers	Project managers, system managers, system engineers, designers, developers



Module A0	
INTRODUCTION THE FUNCTIONAL SAFETY CHALLENGE IN THE AUTOMATION INDUSTRY	
DESCRIPTION	Catastrophic accidents in the past have put the public focus again on Functional Safety. In a condensed form, this training module outlines the core statements of IEC 61508 and their consequences for forward-thinking ways of dealing with Functional Safety.
CONTENTS	<ul style="list-style-type: none"> ■ Introduction into the topic of Functional Safety ■ Quick overview of the requirements resulting from IEC 621508 Ed. 2. ■ Current state of the art in Functional Safety and its legal consequences
DURATION	1.5 hours
TARGET GROUP	Decision makers (management) and all FS prospective

Module A1	
OVERVIEW OF STANDARDS OVERVIEW OF THE REQUIREMENTS ACC. TO IEC 61508	
DESCRIPTION	This course addresses all the essential requirements of the new IEC 61508 (Ed. 2). The key requirements and their practice-oriented implementation are covered in an illustrative way. A course for all who would like to initially obtain a complete overview of all the parts of the standard.
CONTENTS	<ul style="list-style-type: none"> ■ Introduction into Functional Safety ■ Overview of the main normative requirements of <ul style="list-style-type: none"> ■ Volume 1: General Requirements ■ Volume 2: System and Hardware ■ Volume 3: Requirements on Safety-oriented Software Development
DURATION	1 day
TARGET GROUP	All personnel involved in FS



Module A2	
CONCEPT DEVELOPMENT FROM RISK ANALYSIS TO CONCEPT DESIGN	
DESCRIPTION	The agenda for the future safety-engineering design is set as early as during the concept creation stage. This module addresses all those who are involved in risk determination (SIL Determination) and the system requirements to be derived from this process.
CONTENTS	<ul style="list-style-type: none"> ■ Practical procedures for risk analysis including an exercise based on an illustrative example ■ Allocation of SIL requirements to risk-reducing measures ■ Derivation of system safety requirements and presentation in the example ■ Elaboration of a system concept considering the requirements of the executed example
DURATION	1 day
TARGET GROUP	Safety managers, project managers, functions developers

Module A3	
HARDWARE DEVELOPMENT SAFETY-ORIENTED HARDWARE DEVELOPMENT	
DESCRIPTION	This module does not focus on hardware development itself but on the verification of the hardware concept which is carried out using mathematical models. A practical example is used to present and practice the probabilistic demonstration of safety.
CONTENTS	<ul style="list-style-type: none"> ■ Hardware safety requirements and their derivation from the system concept ■ Determination of the required failure rates at component level and their adaptation to operating conditions ■ Demonstration of the required Safe Failure Fraction (SFF) and the absolute failure rate/probability (PFH/PFD)
DURATION	1 day
TARGET GROUP	Safety managers, hardware developers



Module A4	
SOFTWARE DEVELOPMENT SAFETY-ORIENTED SOFTWARE DEVELOPMENT	
DESCRIPTION	In the case of safety-relevant systems the demands made on the software development process exceed the quality requirements which are high to begin with. In this training module the application of the software safety lifecycle and the interpretation of the techniques and methods to be selected are explained in an illustrative manner.
CONTENTS	<ul style="list-style-type: none"> ■ Software development process acc. to IEC 61508-3 (Ed. 2) ■ Selection of techniques and measures for SIL-conformant software development ■ Intersections with respect to existing quality standards (SPICE, CMMI) ■ Project documentation
DURATION	1 day
TARGET GROUP	Safety managers, software developers

Module A5	
ANALYTICS METHODICAL APPROACH TO SAFETY ANALYSIS	
DESCRIPTION	Analytics is a cross-sectional requirement with respect to all development stages in the safety lifecycle. This module presents the optimized usage of various analytical methods and their fields of application plus their advantages and disadvantages.
CONTENTS	<ul style="list-style-type: none"> ■ Overview of the most commonly used analytical methods in Functional Safety ■ Benefits of analytics for Functional Safety ■ Various analytical methods and their advantages and disadvantages ■ Deepening of the most commonly used analysis techniques based on examples ■ Adaptation proposals for possibly existing analytical methods
DURATION	1 day
TARGET GROUP	Safety managers, analytical engineers



**FURTHER INFORMATION, DATES
AND A REGISTRATION
FACILITY ARE AVAILABLE AT
WWW.SGS-TUV-SAAR.COM/FS-TRAINING**

Module AMP1	
EVALUATION OF MECHANICAL/MECHATRONIC SYSTEMS IN THE CONTEXT OF FUNCTIONAL SAFETY	
DESCRIPTION	This seminar aims to answer questions related to the evaluation of mechanical/mechatronic components in relation of functional safety. Participants will learn the necessary analytical „set of tools“ and the practical application and can practice on practical examples.
CONTENTS	<ul style="list-style-type: none"> ■ Overview: mechanical/mechatronic components and subsystems in safety circuits ■ Reliability and safety of mechanical/mechatronic components ■ Applicable standards and data collections ■ Analytical method for determining the safety characteristics ■ Good Engineering Practice and state-of-the-art in the design of mechanical/mechatronic components and subsystems for security applications ■ Mediation of the theoretical relationships based on practical examples from the fields of systems- and process technology, machinery and automotive
DURATION	1 day
TARGET GROUP	Project managers, system managers, system engineers, designers, developers



TRAININGS ON MACHINE SAFETY

Machine safety is defined by a range of standards.

SGS-TÜV Saar offers you training modules which include the most important standards and the current state of legislation.

Our experienced trainers use illustrative examples to impart how you can implement the standards in your operations. You will receive a guide through the maze of laws and regulations – from relevant standards through to the Machinery Directive.

Special training offers put a stronger focus on detailed aspects and provide you with extensive knowledge of how you comply with the requirements of the standards in your day-to-day operations.

Trainings on Machine Safety					
	INTRODUCTION	OVERVIEW OF STANDARDS	DEVELOPMENT 1	DEVELOPMENT 2	MECHANICS
CODE	M0	M1	M2	M3	AMP1
TITLE	Machinery Directive and CE marking	Basic standards of machine safety	Implementation of ISO 13849	Implementation of IEC 62061	Evaluation of mechanical/mechatronic systems in the context of Functional Safety
SUB-TITLE	Ways to achieving conformity	ISO 13849 and IEC 62061			
DURATION	1.5 hours	1 day	1 day	1 day	1 day
TARGET GROUP	Decision makers (management) and all FS prospective	All personnel involved in FS	Safety managers, project managers, developers	Safety managers, project managers, developers	Project managers, system managers, system engineers, designers, developers



Module M0	
INTRODUCTION MACHINERY DIRECTIVE AND CE MARK	
DESCRIPTION	By issuing the new Machinery Directive legislators have set forth requirements for Functional Safety. This training module points out a practical way to implement the Machinery Directive through to CE marking. The formal approach to be taken plus the resulting legal consequences are presented in an illustrative manner.
CONTENTS	<ul style="list-style-type: none"> ■ Introduction into the Machinery Directive ■ Legal consequences of the Machinery Directive ■ Ways to obtain CE marks (overview)
DURATION	1.5 hours
TARGET GROUP	Decision makers (management) and all FS prospective

Module M1	
OVERVIEW OF STANDARDS BASIC STANDARDS FOR MACHINE SAFETY	
DESCRIPTION	In the field of machine safety there are essentially two relevant standards to be considered. Their requirements overlap to some extent. This training module presents and compares the requirements of ISO 13849 and IEC 62061.
CONTENTS	<ul style="list-style-type: none"> ■ Introduction into Functional Safety in machine safety ■ Overview of ISO 13849 requirements ■ Overview of IEC 62061 requirements ■ Comparison of the standards
DURATION	1 day
TARGET GROUP	All personnel involved in FS



Module M2	
DEVELOPMENT 1 IMPLEMENTATION OF ISO 13849	
DESCRIPTION	ISO 13849 has replaced the expiring EN 954 standard and also defines additional requirements. This module demonstrates the implementation of the standard in an illustrative manner using an example from the field.
CONTENTS	<ul style="list-style-type: none"> ■ Introduction into ISO 13849 ■ Presentation of a field case ■ Implementation of the requirements in the field case ■ Documentation requirements
DURATION	1 day
TARGET GROUP	Safety managers, project managers, developers

Module M3	
DEVELOPMENT 2 IMPLEMENTATION OF IEC 62601	
DESCRIPTION	IEC 62601 establishes a direct reference to the basic standard, IEC 61508, and thereby practically details the application requirements for machine safety. This module demonstrates the implementation of the standard in an illustrative manner using an example from the field.
CONTENTS	<ul style="list-style-type: none"> ■ Introduction into IEC 62601 ■ Presentation of a field case ■ Implementation of the requirements in the field case ■ Documentation requirements
DURATION	1 day
TARGET GROUP	Safety managers, project managers, developers



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Module AMP1	
EVALUATION OF MECHANICAL/MECHATRONIC SYSTEMS IN THE CONTEXT OF FUNCTIONAL SAFETY	
DESCRIPTION	This seminar aims to answer questions related to the evaluation of mechanical/mechatronic components in relation of functional safety. Participants will learn the necessary analytical „set of tools“ and the practical application and can practice on practical examples.
CONTENTS	<ul style="list-style-type: none"> ■ Overview: mechanical/mechatronic components and subsystems in safety circuits ■ Reliability and safety of mechanical/mechatronic components ■ Applicable standards and data collections ■ Analytical method for determining the safety characteristics ■ Good Engineering Practice and state-of-the-art in the design of mechanical/mechatronic components and subsystems for security applications ■ Mediation of the theoretical relationships based on practical examples from the fields of systems- and process technology, machinery and automotive
DURATION	1 day
TARGET GROUP	Project managers, system managers, system engineers, designers, developers



TRAININGS ON AGRICULTURAL AND FORESTRY MACHINES

The agricultural and forestry machine sector has created its own standard for Functional Safety, ISO 25119.

This standard details the requirements arising out of ISO 13849 and incorporates many elements of the basic standard, IEC 65108, as well.

In our training sessions we will show you how to handle the complex requirements of the standard in the field. Based on concrete examples you will learn how to integrate these requirements into your established development process.

Trainings on Agricultural and Forestry Machine Safety				
	INTRODUCTION	OVERVIEW OF STANDARDS	DEVELOPMENT	SPECIAL TOPICS
CODE	L0	L1	L2	LW X
TITLE	Functional Safety for agricultural and forestry machines	Overview of the requirements of the standard	Safety-oriented development of E/E functions	→ By indiv. arrangement; please enquire
SUB-TITLE		Acc. to ISO 25119	Acc. to ISO 25119	
DURATION	1.5 hours	1 day	2 days	Per indiv. arrangement
TARGET GROUP	Decision makers (management) and all FS prospective	All personnel involved in FS	Safety managers, project managers, developers	Per indiv. arrangement



Module L0	
INTRODUCTION FUNCTIONAL SAFETY FOR AGRICULTURAL AND FORESTRY MACHINES	
DESCRIPTION	What is ISO 25119? What are the legal consequences resulting from this standard? What effort is required to implement the standard? These and other questions will be answered in this introductory training module.
CONTENTS	<ul style="list-style-type: none"> ■ Introduction into Functional Safety ■ Status of standards and their legal consequences ■ Approach to and effort of implementing the requirements according to ISO 25119
DURATION	1.5 hours
TARGET GROUP	Decision makers (management) and all FS prospective

Module L1	
OVERVIEW OF STANDARDS OVERVIEW OF ISO 25119 REQUIREMENTS	
DESCRIPTION	ISO 25119 is a complex set of standards and hard to comprehend for beginners in the field of Functional Safety. This training module initially introduces the basics of Functional Safety and then explains the core statements of the standards.
CONTENTS	<ul style="list-style-type: none"> ■ Introduction into Functional Safety ■ Overview of ISO 25119 requirements ■ Documentation requirements
DURATION	1 day
TARGET GROUP	All personnel involved in FS



Module L2	
DEVELOPMENT SAFETY-ORIENTED DEVELOPMENT OF E/E FUNCTIONS ACC. TO ISO 25119	
DESCRIPTION	This training module is designed to intensify the knowledge conveyed in Module 1. Based on an illustrative example the implementation of the requirements of the standard from the concept phase through to hard- and software development will be practiced.
CONTENTS	<ul style="list-style-type: none"> ■ Functional Safety Management requirements ■ Concept phase and implementation requirements ■ System development and implementation requirements ■ Hardware development and implementation requirements ■ Software development and implementation requirements
DURATION	2 days
TARGET GROUP	Safety managers, project managers, developers

Modul LW X	
SPECIAL TOPICS	
DESCRIPTION	On special topics we can offer you customized workshops. The contents may contain elements of the standard modules with extensions per individual agreement. Please contact our experts.
CONTENTS	<ul style="list-style-type: none"> ■ Per agreement with the respective SGS-TÜV Saar expert
DURATION	Subject to individual agreement
TARGET GROUP	According to contents



TRAININGS FOR THE PROCESS INDUSTRY

The process industry in a certain way triggered the development and establishment of Functional Safety standards. A serious accident in a petroleum refinery prompted experts around the world to start thinking about Functional Safety requirements. From this process evolved the basic standard, IEC 61508, from which the application standard for the process industry, IEC 61511, was derived shortly afterwards.

SGS-TÜV Saar offers you trainings in which you learn how to optimally apply IEC 61511. You will particularly benefit from the experiences of our trainers as pioneers in the field of Functional Safety. They will train you using case studies you can directly integrate into your operational planning processes.

Trainings for the Process Industry				
	INTRODUCTION	OVERVIEW OF STANDARDS	CONCEPT DEVELOPMENT	MECHANICS
CODE	P0	P1	P2	AMP1
TITLE	The Functional Safety challenge in the process industry	Functional Safety in the process industry	Functional Safety in the process industry	Evaluation of mechanical/mechatronic systems in the context of Functional Safety
SUB-TITLE		Entry-level seminar	Advanced seminar	
DURATION	1.5 hours	1 day	2 days	1 day
TARGET GROUP	Decision makers (management) and all FS prospective	Safety managers, project managers, planning engineers	Planning engineers	Project managers, system managers, system engineers, designers, developers



Module P0	
INTRODUCTION THE FUNCTIONAL SAFETY CHALLENGE IN THE PROCESS INDUSTRY	
DESCRIPTION	Heightened awareness is necessary. The catastrophes of the past clearly show the immense importance of Functional Safety for the process industry. This training module demonstrates the key points of implementing the standard and their legal consequences.
CONTENTS	<ul style="list-style-type: none"> ■ Introduction into Functional Safety ■ Status of standards and their legal consequences ■ Approach to and effort of implementing the requirements according to IEC 61511
DURATION	1.5 hours
TARGET GROUP	Decision makers (management)

Module P1	
OVERVIEW OF STANDARDS FUNCTIONAL SAFETY IN THE PROCESS INDUSTRY (ENTRY LEVEL)	
DESCRIPTION	This training module lays the essential groundwork for planning, establishing and operating process engineering equipment in the spirit of Functional Safety. Practical implementation is demonstrated by means of document examples.
CONTENTS	<ul style="list-style-type: none"> ■ Introduction into Functional Safety ■ Overview of IEC 61511 requirements ■ Documentation requirements
DURATION	1 day
TARGET GROUP	All personnel involved in FS



Module P2	
DEVELOPMENT FUNCTIONAL SAFETY IN THE PROCESS INDUSTRY (ADVANCED LEVEL)	
DESCRIPTION	This training module is designed to intensify the knowledge conveyed in Module 1. Based on an illustrative example the implementation of the requirements of the standard from the concept phase through to hard- and software development will be practiced.
CONTENTS	<ul style="list-style-type: none"> ■ Functional Safety Management requirements ■ Concept phase and implementation requirements ■ System development and implementation requirements ■ Hardware development and implementation requirements ■ Software development and implementation requirements
DURATION	2 days
TARGET GROUP	Safety managers, project managers, developers

Module AMP1	
EVALUATION OF MECHANICAL/MECHATRONIC SYSTEMS IN THE CONTEXT OF FUNCTIONAL SAFETY	
DESCRIPTION	This seminar aims to answer questions related to the evaluation of mechanical/mechatronic components in relation of functional safety. Participants will learn the necessary analytical „set of tools“ and the practical application and can practice on practical examples.
CONTENTS	<ul style="list-style-type: none"> ■ Overview: mechanical/mechatronic components and subsystems in safety circuits ■ Reliability and safety of mechanical/mechatronic components ■ Applicable standards and data collections ■ Analytical method for determining the safety characteristics ■ Good Engineering Practice and state-of-the-art in the design of mechanical/mechatronic components and subsystems for security applications ■ Mediation of the theoretical relationships based on practical examples from the fields of systems- and process technology, machinery and automotive
DURATION	1 day
TARGET GROUP	Project managers, system managers, system engineers, designers, developers



TRAININGS FOR THE ELECTRICAL APPLIANCES SECTOR

Electronic components have been integral components of our household appliances for many years – a world without electronics is hard to imagine. Electronic circuits increasingly replace safety functions in appliances or enable certain functionalities in the first place.

Our training series on Functional Safety for the household appliances sector explains how you can implement the relevant standards in your company.

We primarily address IEC 60730 on the topic of automatic electrical control units for household use and similar applications plus IEC 60335-1 on the safety of electrical equipment for household use and similar purposes.

Trainings for the Household Appliances Sector				
	INTRODUCTION	OVERVIEW OF STANDARDS	CONCEPT DEVELOPMENT	SPECIAL TOPICS
CODE	H0	H1	H2	HW X
TITLE	Functional Safety challenges in household appliances and similar equipment	Overview of standards Functional Safety in household appliances and similar equipment	Functional Safety in control units for household use etc.	→ By indiv. arrangement; please enquire
SUB-TITLE	Introduction for decision makers	Entry-level seminar	Advanced seminar	
DURATION	1.5 hours	1 day	2 days	Per indiv. arrangement
TARGET GROUP	Decision makers (management) and all FS prospective	Safety managers, project managers, developers	Developers	Per indiv. arrangement



Module H0	
INTRODUCTION THE FUNCTIONAL SAFETY CHALLENGE IN HOUSEHOLD APPLIANCES ETC.	
DESCRIPTION	Safety of household appliances cannot be taken for granted. Malfunctions can quickly lead to dangerous situations as consumers, unlike industrial users, have no safety-engineering training. The focus is on software. This training module shows the key points of implementing the standards and their legal consequences.
CONTENTS	<ul style="list-style-type: none"> ■ Introduction into Functional Safety ■ Status of standards and their legal consequences ■ Approach to and effort of implementing the requirements according to IEC 60730/IEC 60335
DURATION	1.5 hours
TARGET GROUP	Decision makers (management) and all FS prospective

Module H1	
OVERVIEW OF STANDARDS FUNCTIONAL SAFETY IN HOUSEHOLD APPLIANCES ETC.	
DESCRIPTION	This training module lays the essential groundwork for applying the relevant standards according to the needs in the field. Practical implementation is demonstrated by means of document examples.
CONTENTS	<ul style="list-style-type: none"> ■ Introduction into Functional Safety ■ Overview of IEC 60730/IEC 60335-1 requirements ■ Documentation requirements ■ Focus on software
DURATION	1 day
TARGET GROUP	All personnel involved in FS

REGISTRATION

You may register to attend our training either by fax or online at www.sgs-tuv-saar.com/fs-training.

We will also be pleased to discuss which module best fits your needs or develop customized training offers for you and your company – just let us know how we can serve you.

Additional information on dates, fees and training locations is available on the internet at www.sgs-tuv-saar.com/fs-training.

Module H2	
ADVANCED LEVEL FUNCTIONAL SAFETY IN CONTROL UNITS FOR HOUSEHOLD USE ETC.	
DESCRIPTION	This training module is designed to intensify the knowledge conveyed in Module H1. Based on an illustrative example the implementation of the requirements of the standard from the concept phase through to hard- and software development will be practiced.
CONTENTS	<ul style="list-style-type: none">■ Functional Safety Management requirements■ Concept phase and implementation requirements■ System development and implementation requirements■ Hardware development and implementation requirements■ Software development and implementation requirements
DURATION	2 days
TARGET GROUP	Safety managers, project managers, developers

Module HW X	
SPECIAL TOPICS	
DESCRIPTION	On special topics we can offer you customized workshops. The contents may contain elements of the standard modules with extensions per individual agreement. Please contact our experts.
CONTENTS	<ul style="list-style-type: none">■ Per agreement with the respective SGS-TÜV Saar expert
DURATION	Subject to individual agreement
TARGET GROUP	According to contentst



PERSONAL QUALIFICATION/CERTIFICATES

The more complex the technology the more experts for Functional Safety are needed in the industry sector. But the question is: who is an expert for Functional Safety? IEC 61508 and its application standards do not answer this question. On the one hand they demand that only experts assess or manage Functional Safety but on the other they do not specify any of the prerequisites to be met by someone who may be considered an expert.

SGS-TÜV Saar as an accredited services provider now offers you the possibility to impart the technical knowledge for Functional Safety to personnel and to thereby qualify them. As an individual possessing this qualification, you justify or even increase your market value. As a business, you have the opportunity to have your staff qualified by an independent party and to secure this technical knowledge for the long term.

CONTENT

We qualify you or your staff for working with Functional Safety. SGS-TÜV Saar has developed a 2-step qualification programme for this purpose. After successful completion of this programme the “SGS-TÜV Saar” seal confirms to the attendee in a certificate that he/she is a professional respectively an expert for Functional Safety.

PREREQUISITES

The first expert status is called “Industrial Functional Safety Expert (IFSE)”: This status will be awarded to you after you have successfully passed the test after completion of the training module. Attendance of the preparatory training modules or, alternatively, proof of completion of equal training, is a prerequisite for admission to the test.

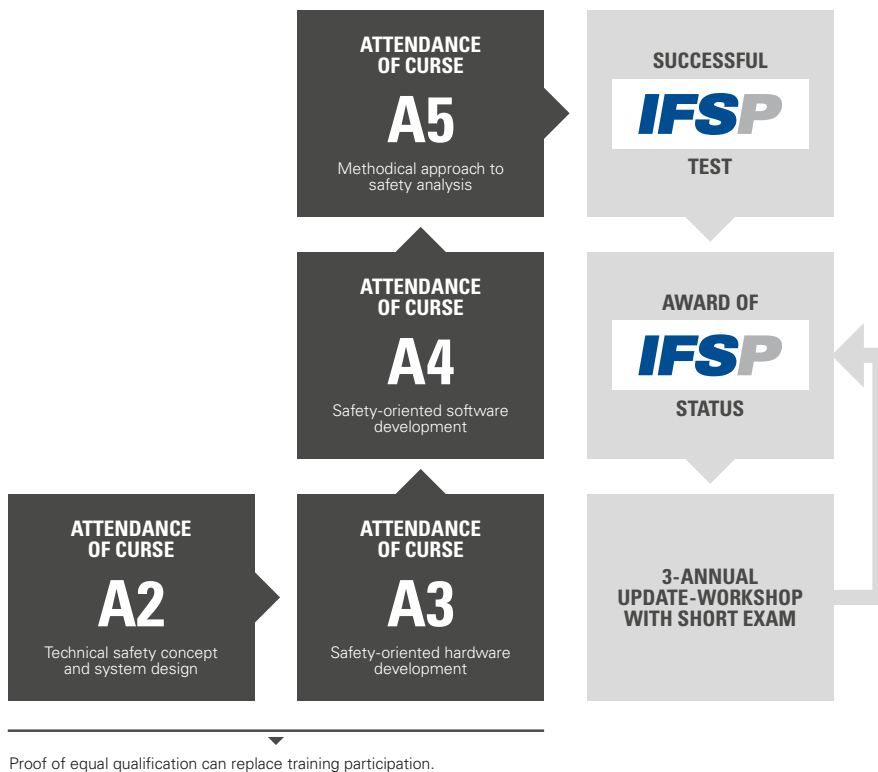
The second expert status is called “Industrial Functional Safety Expert (IFSE)”: To attain it, you will have to demonstrate that you have performed relevant work for at least five years. Individuals desiring to achieve this status have to apply with the SGS-TÜV Saar Testing Commission, document their experience in Functional Safety and successfully pass a qualification audit.

VALIDITY

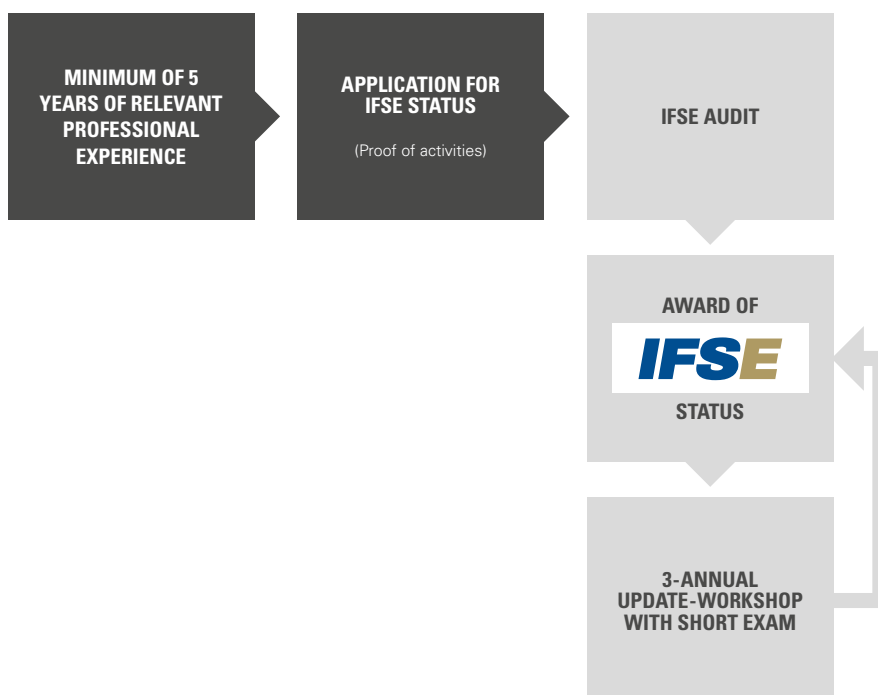
Both qualifications (IFSP and IFSE) are valid for 3 years. For the extension to another 3 years need to prove following points:

IFSP	IFSE
<ul style="list-style-type: none"> ■ Evidence of minimum 3 days further training in Functional Safety within the last 3 years <ul style="list-style-type: none"> ■ Trainings and workshops ■ Participation in congresses (1 day will be taken in account) ■ Articles in magazines (for each 2 articles 1 day will be taken in account) 	<ul style="list-style-type: none"> ■ Evidence of minimum 5 days further training in Functional Safety within the last 3 years <ul style="list-style-type: none"> ■ Trainings and workshops ■ Participation in congresses (1 day will be taken in account) ■ Articles in magazines (for each 2 articles 1 day will be taken in account)
<ul style="list-style-type: none"> ■ 1,500 h work in Functional Safety area within the last 3 years (confirmation of employer and activity report required) 	<ul style="list-style-type: none"> ■ 1,500 h work in Functional Safety area within the last 3 years (confirmation of employer and activity report required)
<ul style="list-style-type: none"> ■ Participation in an update-workshop with the successful test of the workshop 	

IFSP QUALIFICATION STEPS



IFSE QUALIFICATION STEPS



**GLOBAL COMPETENCE CENTER
FUNCTIONAL SAFETY**

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