TRAINING SEMINARS

PROGRAM

EXPLOSION PROTECTION

FUNCTIONAL SAFETY (SIL)

FIELDBUS TECHNOLOGY IN HAZARDOUS AREAS

PEPPERL+FUCHS
PROTECTING YOUR PROCESS

OUR CENTERS OF EXCELLENCE FORM THE CORE OF OUR WORLDWIDE TECHNOLOGY AND SERVICE NETWORK

Our global presence enables Pepperl+Fuchs to combine the best of two worlds: the highest technical standards and efficient, low-cost production facilities. This means we can provide you with everything needed for the efficient and safe operation of your process system. Pepperl+Fuchs' products and system solutions are always at the cutting edge of technology and often set the trend in their field. Competent and experienced engineers and consultants throughout the world stand ready to lend any kind of assistance – wherever and whenever you need us.

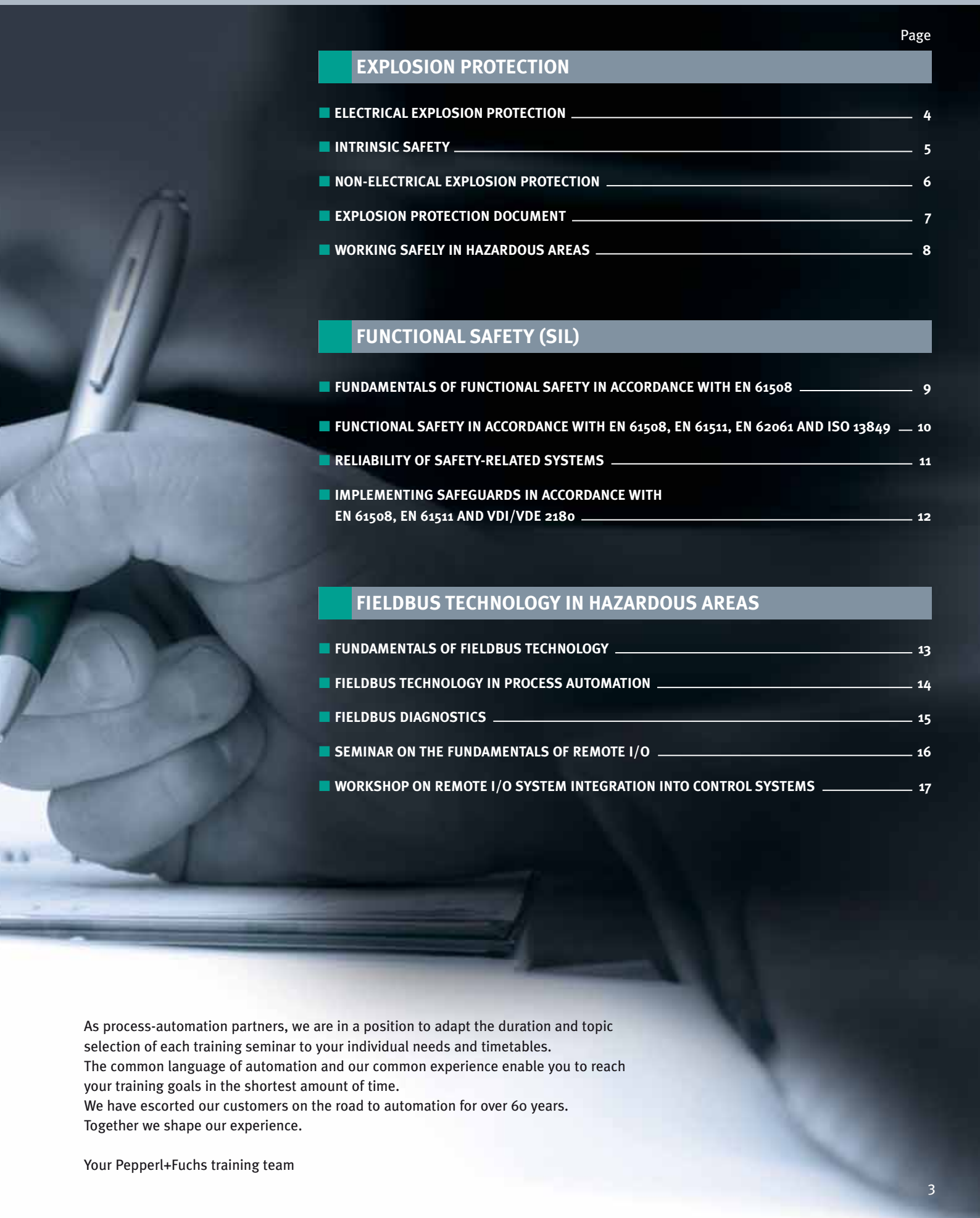
A TRADITION OF INNOVATION

A long tradition as an innovator makes Pepperl+Fuchs one of the leading providers for the process industry worldwide. We have been setting technological standards with our components and solutions for over 60 years. We are now taking the next step toward a new dimension of technology: DART and WirelessHART.

BUSINESS OUTLOOK

Our target markets are the chemical, pharmaceutical, and oil- and gas-processing industries, petrochemistry and all organizations involved in sewage treatment and energy production. We are not only providers in all of these areas, but also partner to the operators, process-system manufacturers, system integrators and consulting engineers. From application-analysis support through our global project team to customer-specific engineering and technical support for plant start-up and operation, we stand by our customers all over the world.

CONTINUING EDUCATION AT PEPPERL+FUCHS



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As process-automation partners, we are in a position to adapt the duration and topic selection of each training seminar to your individual needs and timetables.
The common language of automation and our common experience enable you to reach your training goals in the shortest amount of time.
We have escorted our customers on the road to automation for over 60 years.
Together we shape our experience.

Your Pepperl+Fuchs training team

ELECTRICAL EXPLOSION PROTECTION

GOALS

Both of the EC Directives 94/9/EC (“ATEX 95”) and 1999/92/EC (“ATEX 137”) relevant to explosion protection have been a national law for several years in EC member states.

The goal of this seminar is to describe:

- Manufacturer and operator responsibilities
- Relevant standards (equipment characteristics, installation, inspection and maintenance)
- National characteristics with regard to employers and operators

TARGET GROUP

- Employers as well as operators and managers of installations in potentially hazardous areas
- Safety engineers and persons responsible for drawing up the explosion-protection document
- Employees in the areas of planning, installation, operation, inspection and maintenance, distribution and purchase of electrical and non-electrical devices, machines and equipment

MEDIA

- Documentation of the seminar contents, as well as the manual and the DVD, “Explosion Protection,” will be given to participants.

CONTENTS

- **Physical-technical fundamentals**
  Explosion preconditions, formation of explosible atmospheres, properties of substances (explosive limits, ignition temperature, etc.), ignition source, ranking of protective measures (explosion prevention and protection)
- **Directive 94/9/EC (“ATEX 95”)**
  Placing on the market, device groups and categories, conformity assessment, instructions, marking
- **Directive 1999/92 (“ATEX 137”)**
  Risk assessment, zone classification, explosion-protection document, authorized person, inspection of installations in potentially hazardous areas
- **Electrical equipment for potentially hazardous areas**
  Fundamentals and features of types of protection, extended identification marking
- **Installation, inspection and maintenance**
  Personnel qualification, characteristics of potentially hazardous areas, preventing sparks (network systems, grounding, potential equalization), device selection (categories, temperature classes, etc.), characteristics of individual types of protection (including electrical drives)
- **Type of protection “intrinsic safety”**
  Functional principle, intrinsically-safe apparatus, simple and associated apparatus, cable requirements, verification of intrinsic safety, installation particularities
- **Dust explosion protection**
  Characteristics of the type of protection, installation, inspection and maintenance
- **Non-electrical explosion protection**
  Non-electrical source of ignition, risk of ignition assessment, type of protection, marking

INTRINSIC SAFETY

GOALS

As opposed to other types of protection, intrinsic safety requires special care with regard to safe energy limitation.

The goal of this seminar is to convey:

- Functional principle
- Installation fundamentals
- Inspection and maintenance

of intrinsically safe installations, as well as drawing attention to the applicable European standards.

TARGET GROUP

- Planners and operators of intrinsically safe installations
- Safety experts and persons responsible for drawing up the explosion protection document
- Employees from the areas of installation, operation, inspection and maintenance

CONTENTS

- **Short historical overview**
- **Functional principle**
  Electrical sparks as ignition source, thermal effects
- Energy limitation, explosion limit curves, marking, assessment of non-certified equipment (simple apparatus), use of EC-type–examination certificate and instruction manual
- **Installation**
  Selection of equipment, simple verification of intrinsic safety, handling of concentrated (lumped) reactances and verification of intrinsic safety when interconnecting several sources (PTB report ThEx-10 and the new 50 % rule), cable and lead requirements, separation of intrinsically-safe and non-intrinsically-safe circuits, marking of intrinsically-safe circuits and terminals, grounding
- **Inspection and maintenance**
  Requiremenets acc. to directive 1999/92/EC, sample inspection schedules from European standards
- **Bus systems**
  Short introduction to intrinsically safe bus technology, description of FISCO (Fieldbus Intrinsically Safe Concept)

MEDIA

- Documentation of the seminar contents, as well as the manual and the DVD, “Explosion Protection,” will be given to participants.

NON-ELECTRICAL EXPLOSION PROTECTION

GOALS

With implementation of both of the EC Directives 94/9/EC ("ATEX 95") and 1999/92/EC ("ATEX 137") relevant to explosion protection, non-electrical explosion protection was also regulated Europe-wide.

Goal of this training seminar:

- Introduction to non-electrical explosion protection
- Description of legal and technical backgrounds in Europe
- Explanation of the relevant standards (equipment characteristics, installation, inspection and maintenance)
- Statement of characteristics with regard to employers and operators

TARGET GROUP

- Employers as well as operators and managers of installations in potentially hazardous areas
- Safety engineers and persons responsible for drawing up the explosion-protection document
- Employees in the areas of planning, installation, operation, inspection and maintenance, distribution and purchase of non-electrical apparatus, machines and equipment

MEDIA

- Documentation of the seminar contents, as well as the manual and the DVD, "Explosion Protection," will be given to participants.

CONTENTS

- **Physical-technical fundamentals**
  Explosion preconditions, formation of explosible atmospheres, properties of substances (explosive limits, ignition temperature, etc.), ignition source, ranking of protective measures (explosion prevention and protection)
- **Directive 94/9/EC ("ATEX 95")**
  Placing on the market, device groups and categories, conformity assessment, instructions, marking
- **Directive 1999/92 ("ATEX 137")**
  Risk assessment, zone classification, explosion-protection document, authorized person, inspection of installations in potentially hazardous areas
- **Non-electrical equipment for potentially hazardous areas**
  Fundamentals and features of types of protection, extended identification marking
- **Installation, inspection and maintenance**
  Personnel qualification, characteristics of potentially hazardous areas, preventing sparks (grounding, potential equalization), device selection (categories, temperature classes, etc.)
- **Dust explosion protection**
  Characteristics of the types of protection, installation, inspection and maintenance
- **Electrostatics**
  Formation of electrostatic charge, discharge types, effects on solids and fluids, protective measures
- **Series of standards EN 13463-... for non-electrical apparatus**
  Procedure for ignition-source assessment, function and characteristics of the types of protection, manufacturer liability, user liability
- **Tertiary or constructive explosion protection**
  Explosion suppression, explosion pressure relief, explosion-proof construction, explosion decoupling, device examples and function

EXPLOSION PROTECTION DOCUMENT

GOALS

With implementation of both of the EC Directives 94/9/EC ("ATEX 95") and 1999/92/EC ("ATEX 137") relevant to explosion protection, non-electrical explosion protection was also regulated Europe-wide.

Goal of this training seminar:

- To ensure the safety of the work environment with regard to explosion protection.
- To provide examples of procedures when drawing up the explosion-protection document, as well as examples for establishing, monitoring and coordinating any necessary measures.

TARGET GROUP

- Employers as well as operators and managers of installations in potentially hazardous areas
- Safety engineers and persons responsible for drawing up the explosion-protection document
- Interested employees from the areas of planning, installation, operation, inspection and maintenance

CONTENTS

- **Fundamentals of explosion protection**
  Potentially explosive atmospheres, atmospheric conditions, key figures of combustibles, potential ignition sources
- **Legal foundations**
  Employer and operator responsibility according to Directive 1999/92/EC, risk assessment, zone classification with examples from standards (EN 60079-10)
- **Explosion protection document**
  Legal requirements, contents, structure, sample documents from professional associations, organizations, companies
- **Maintenance of explosion protection document areas**
  Inspection of work sites in potentially hazardous areas, installations and equipment through authorized persons or approved inspection agencies, documentation of test results, adaptation and updating of the document.

MEDIA

- Documentation of the seminar contents, as well as the manual and the DVD, "Explosion Protection," will be given to participants.

SAFELY WORKING IN AREAS SUBJECT TO THE RISK OF EXPLOSION

GOALS

The EC Directive 1999/92/EC, implemented into German law as part of the German Ordinance on Industrial Safety and Health, regulates the safety of employees at their worksite. Courses and instructions, among others, are required that describe the characteristics and hazards of activities in potentially hazardous areas.

The goal of this training seminar is to put participants in a position to:

- Recognize explosion-hazardous areas
- Correctly use and/or recognize protective gear and escape routes
- Adapt one's comportment and job activities to areas subject to the risk of explosion
- Apply specific procedures (i.e. work-permit systems)

TARGET GROUP

All persons who are active in the potentially explosive zone such as:

- Maintenance and installation personnel (electrical and non-electrical)
- Employees of subcontractors that take on temporary tasks in the Ex-area (i.e. construction and cleaning work)

MEDIA

- Documentation of the seminar contents, as well as the manual and the DVD, "Explosion Protection," will be given to participants.

CONTENTS

- **Physical-technical fundamentals**
  Formation of potentially explosive atmospheres, Properties of materials (explosive limits, ignition temperature ...), zone classification
- **Implementation rules**
  Implementation preconditions, repetition of fault finding/ elimination and maintenance regulations, rules of use for electrical apparatus, rules of use for non-electrical apparatus
- **Examples**
  Zone classification, summary of work and safety regulations and validation
  Inspection (as required)

FUNDAMENTALS OF FUNCTIONAL SAFETY IN ACCORDANCE WITH EN 61508

GOALS

EN 61508 sets the basis for the planning, set-up and operation of electrical and electronic protection measures. The goal of the seminar is to give an overview of the fundamental principles and methods of EN 61508. Participants will learn the most important terms and definitions from the area of functional safety and be able to interpret them.

TARGET GROUP

- Employers and operators and managers of installations with safety-relevant monitoring circuits (protection functions)
- Safety engineers and persons responsible for the assessment and planning of safety-relevant functions
- Employees from the areas of planning, installation, operation, inspection and maintenance

MEDIA

- Participants will receive documents of seminar contents and the SIL manual.

CONTENTS

- **Terms and definitions**
  Risk assessment, initial risk, tolerable risk, safety, danger, safe errors, dangerous errors, hardware fault tolerance (HFT), safe failure fraction (SFF), failure rate, Probability of Failure on Demand PFD, Safety Integrity Level (SIL), safety life cycle, Safety Requirement Specification (SRS), etc.
- **Safety life cycle**
  Accident causes, risk analysis, definition of safety function, implementation of safety functions
- **Qualitative and quantitative requirements**
  Safe failure fraction (SFF), hardware fault tolerance (HFT), fault avoidance, fault control, fault recognition, PFD calculation of one- and two-channel systems, significance and rating of the QM system

FUNCTIONAL SAFETY IN ACCORDANCE WITH EN 61508, EN 61511, EN 62061 AND ISO 13849

GOALS

EN 61508 and the sector standards derived thereof – with EN 61511 foremost – form the basis for the planning, set-up and operation of electrical and electronic protection measures.
The goal of the training seminar is to give an overview of the fundamental principles of functional safety as well as to outline the methods applied today. Participants will learn all-important terms and definitions from the area of functional safety and be able to interpret them.

TARGET GROUP

- Employers and operators and managers of installations with safety-relevant monitoring circuits (protection functions or Z-functions)
- Safety engineers and persons responsible for the assessment and planning of safety-relevant functions
- Employees from the areas of planning, installation, operation, inspection and maintenance

MEDIA

- Participants will receive documents of seminar contents and the SIL manual.

CONTENTS

- **Terms and definitions**
  Risk assessment – initial risk – tolerable risk, safety – safe faults – hazardous faults, hardware fault tolerance (HFT), safe failure fraction (SFF), failure rate, Probability of Failure on Demand (PFD), Probability of Failure per Hour (PFH), Safety Integrity Level (SIL), safety life cycle, Safety Requirement Specification, etc.
- **Safety life cycle**
  Accident causes, risk analysis, safety requirements, definition of safety function, implementation of safety functions, operation, maintenance, changes, decommissioning
- **Qualitative and quantitative requirements**
  Sum of safe failure fraction (SFF), hardware fault tolerance (HFT), failure rate and probabilities, fault prevention, fault control, fault recognition, PFD/PFH calculation, significance and ranking of the QM system, Funtional Safety Management
- **Mathematical methodology (scope reduced in 1-day course)**
  Probablistic assessment of safety arrangements, fault models, fault types, repeat tests, repair time, diagnosis, failure probability of complex systems on demand, redundancy
- **Introduction to EN 61511**
  SIS and SIF – differences between IEC/EN 61508 and IEC/EN 61511, operational reliability, NE 130
- **Introduction to EN 62061 and ISO 13849**
  Differences between safety functions with low and high requirement rate, concept differentiation (i.e. SIL and Performance Level PL), “suggested architectures,” error reaction time, evaluation of non-electrical/electronic/ programmable electronic safety components (B10 values)

RELIABILITY OF SAFETY-RELATED SYSTEMS

GOALS

The training seminar imparts basic knowledge of service life/ reliability. Participants become familiar with the failure mechanisms and the failure characteristics of electronic and mechanical components. Furthermore, how the failure probability of complex systems can be gleaned from the reliability data of individual components will be described. PFD/PFH calculation in accordance with EN 61508 is especially covered here.

TARGET GROUP

- Operators and managers of installations with safety-relevant monitoring circuits (protection functions or Z-functions)
- Safety experts and persons responsible for the assessment and planning of safety-relevant functions
- Employees from the areas of planning, installation, operation, inspection and maintenance

MEDIA

- Participants will receive documents of seminar contents and the SIL manual.

CONTENTS

- **Terms and definitions**
  Bathtub curve – failure rate – service life – MTBF/MTTF – MTTR – safe faults – dangerous faults – hardware fault tolerance (HFT) – safe failure fraction (SFF) – Probability of Failure on Demand (PFD) – Probability of Failure per Hour (PFH) – MooN-System – Arrhenius law – Exponential distribution – Weibull distribution – reliability block diagram – fault-tree method – etc.
- **Apparatus reliability**
  Parts Count Method, Parts Stress Method, data sources for building-component failure rates, useful life, metrological determination of failure rates, accelerated tests, implementation requirements, evaluation criteria, distribution of service life
- **System reliability**
  Diagnosis, safe failure fraction (SFF), hardware fault tolerance (HFT), redundancy, failure rates and service life of multichannel systems, fault control, fault recognition, PFD/PFH calculation, B10-value, reliability block diagram, fault trees
- **Mathematical basis**
  Probability calculation, distribution function, density function, expected value, linking of random variables, descriptive examples, mistakes

IMPLEMENTATION OF PROTECTIVE MEASURES IN ACCORDANCE WITH EN 61508, EN 61511 AND VDI/VDE 2180 – EXAMPLES FROM REAL LIFE

GOALS

The application of EN 61508, EN 61511 and VDI/VDE 2180 is learned through practical examples. The basic requirements of the standards listed above are internalized. Along with the use of methods and tools, a pragmatic approach to functional safety is imparted that, in many cases, can be applied without special software support. The knowledge acquired is practiced in small groups and discussed altogether. Theoretical contents are only presented to the extent that they are indispensable for carrying out practical tasks. Practical relevance and concrete explanations on how to proceed are given priority.

TARGET GROUP

- Responsible planners and operators and managers of installations with safety-relevant monitoring circuits (protection functions or Z-functions).
- Safety engineers and persons who are responsible for the safety of the installations
- Employees from the areas of planning/engineering, installation, operation, inspection and maintenance

MEDIA

- Documents of seminar contents and the SIL manual will be given to participants.
  The Excel files that were used or created will also be given to participants.

CONTENTS

- **Terms and definitions**
  Risk assessment – initial risk – tolerable risk – HAZOP/PAAG – risk matrix – risk graph – protection function – safe failure – dangerous failure – hardware fault tolerance (HFT) – redundancy – regularly repeated tests – failure probability – technical safety availability – operational availability – Safety life cycle – Safety Requirement Specification (SRS) – diagnosis – diagnosis coverage – Safety Manual – etc
- **Safety life cycle**
  Accident causes, risk analysis, safety requirements, definition of safety function, implementation of safety functions, operation, maintenance, changes, decommissioning
- **Organizational requirements**
  Significance and ranking of the QM system, Functional Safety Management, fault model, repeated test, repair time, fault prevention, documentation, verification, validation
- **Technical requirements**
  Hardware fault tolerance (HFT), fault control, fault recognition, apparatus failure rates, failure probability, PFD calculation, SIL “certificate”, Safety Manual, device data
- **Real-life examples**
  Overflow safety device, heat exchanger, feed chute (subject to modifications)
- **Tools**
  Microsoft® Excel and possibly other tools to be agreed with participants

FUNDAMENTALS OF FIELDBUS TECHNOLOGY

GOALS

The seminar imparts fundamentals, techniques and characteristics of different field busses in automation technology.

TARGET GROUP

- Engineers, technicians and anyone interested in gaining an overview of fieldbus technology.

MEDIA

- Participants will receive documents of seminar contents.

CONTENTS

- **Communication models**
  - ISO/OSI reference model
- **Network topologies**
  - Star structure
  - Ring structure
  - Line structure
  - Tree structure
- **Bus access method**
  - Master/slave process
  - Publisher/Subscriber process
  - Token passing process
  - CSMA
- **Data protection**
  - Parity bit
  - Block securing
  - Hamming distance
  - CRC
- **Presentation of information**
  - NRZ
  - RZ
  - Manchester II coding
  - FSK, ASK, PSK
- **Transfer standards**
  - RS232-, V24 Interface
  - RS422 Interface
  - RS485 Interface
- **Transfer techniques**
  - Copper lead
  - Fiber-optic cables
- **Connecting networks**
  - Repeater
  - Bridges
  - Router
  - Switches
  - Gateways
- **International fieldbus standardization**
  - IEC Fieldbus
- **Examples of bus systems**
  - Ethernet
  - PROFIBUS
  - FOUNDATION fieldbus
  - MODBUS
  - CAN
  - AS-Interface

FIELDBUS TECHNOLOGY IN PROCESS AUTOMATION

GOALS

The seminar imparts the basics and applications of PROFIBUS and FOUNDATION fieldbus in process automation.

TARGET GROUP

- Engineers, technicians, practitioners and anyone interested in gaining an overview of fieldbus technology in process automation.

CONTENTS

- **Fundamentals**

– Topology
– Bus access procedure
– Coding procedure
– Data transfer techniques
– Data protection procedures

- **Integration procedures**
  – GSD
  – EDD
  – DTM
  – DD
- **PROFIBUS PA – FOUNDATION Fieldbus in comparison**
  – Bus access
  – Configuration
  – Time response
- **Installations planning with fieldbus technology**
  – Segment layout
  – Installation structures
- **Explosion protection**
  – FISCO Model
  – Entity Model
- **Safety-related fieldbus systems**
  – PROFIsafe
  – SIS

PARTICIPATION FEE · MEDIA

- Participants will receive documents of seminar contents.

FIELDBUS DIAGNOSTICS

GOALS

The training seminar imparts the technical basics of IEC 61158-2. The seminar participant will learn the extensive functions of the Advanced Diagnostic Modules, which will support them in the commissioning of fieldbus segments (PROFIBUS PA or FOUNDATION Fieldbus H1) in online monitoring and fault detection. Furthermore, which parameters affect measurements and how possible fault causes can be gleaned from them is also taught.

TARGET GROUP

- Engineers, commissioning engineers, maintenance engineers

CONTENTS

- **System description**
- **Structures and IEC 61158-2 marking**
  - Cables
  - Technologies
  - Cable lengths
- **FISCO Model- Fieldbus Intrinsically Safe Concept**
- **High-Power Trunk concept**
- **The need for fieldbus diagnostics**
- **Structure of a PACTware project**
- **Integration**
  - PROFIBUS Master Class 2
  - External diagnostic bus
  - Integration into other software frames (i.e. FieldMate, Fieldcare, AMS, PRM)
- **Functions of the FieldConnex Diagnostic Manager, ADM**
  - Commissioning Wizard
  - Snapshot Explorer
  - Online parameterization and monitoring
  - Data history
  - Alarm list
  - Diagnostics
  - Oscilloscope
- **Practical examples**
  - Over termination
  - Noise
  - Short-circuit and lead breakage

SEMINAR REMOTE I/O FUNDAMENTALS

GOALS

The training seminar provides the basics of Remote I/O for applications in process automation. Using practical examples, the configuration and parameterization of Remote I/O stations with connections to HART devices is described.

TARGET GROUP

- The seminar is directed at engineers, technicians and specialists who would like to get started in Remote I/O technology.

CONTENTS

- **Fundamentals of Remote I/O communication with PROFIBUS**
- **Integration strategies with GSD, FDT and EDDL**
- **Remote I/O online extension with PROFIBUS**
- **Remote I/O diagnosis and troubleshooting**
- **Installations planning with Remote I/O**
- **Explosion protection and FISCO Model**

MEDIA

- Documents of seminar contents will be given to participants.

WORKSHOP REMOTE I/O SYSTEM INTEGRATION INTO CONTROL SYSTEMS

GOALS

The training seminar provides the fundamentals, application and use of Remote I/O technology. The configuration and parameterization of Remote I/O bus stations with connections to HART devices is described. System integration in three control systems is displayed live and can be field tested.

TARGET GROUP

- The seminar is directed at engineers, and technicians and specialists who would like to learn how Remote I/O can be integrated in to different control systems. This is also important for machine- and plant-builder specialists and apparatus and device builders from the chemical, petrochemical, and pharmaceutical industries who are involved in project planning, maintenance and the operation of fieldbus installations in potentially hazardous areas.

CONTENTS

- **Fundamentals of Remote I/O communication with PROFIBUS**
- **Integration into Siemens PCS 7**
- **Integration into ABB Freelance 800F**
- **Integration into Emerson Delta V**

MEDIA

- Documents of seminar contents will be given to participants.

GENERAL

Pepperl+Fuchs runs training seminars on topics in the area of explosion protection, functional safety and bus systems.
The training seminars last one or two days, depending on the topic.

Here you will find an overview of the topics in our open program. The events are open to all.

Select your topic – you will find a registration form on the back page. As we are constantly making additions to the training schedule, we recommend that you visit our process automation homepage on the Internet:
http://www.pepperl-fuchs.com/trainings

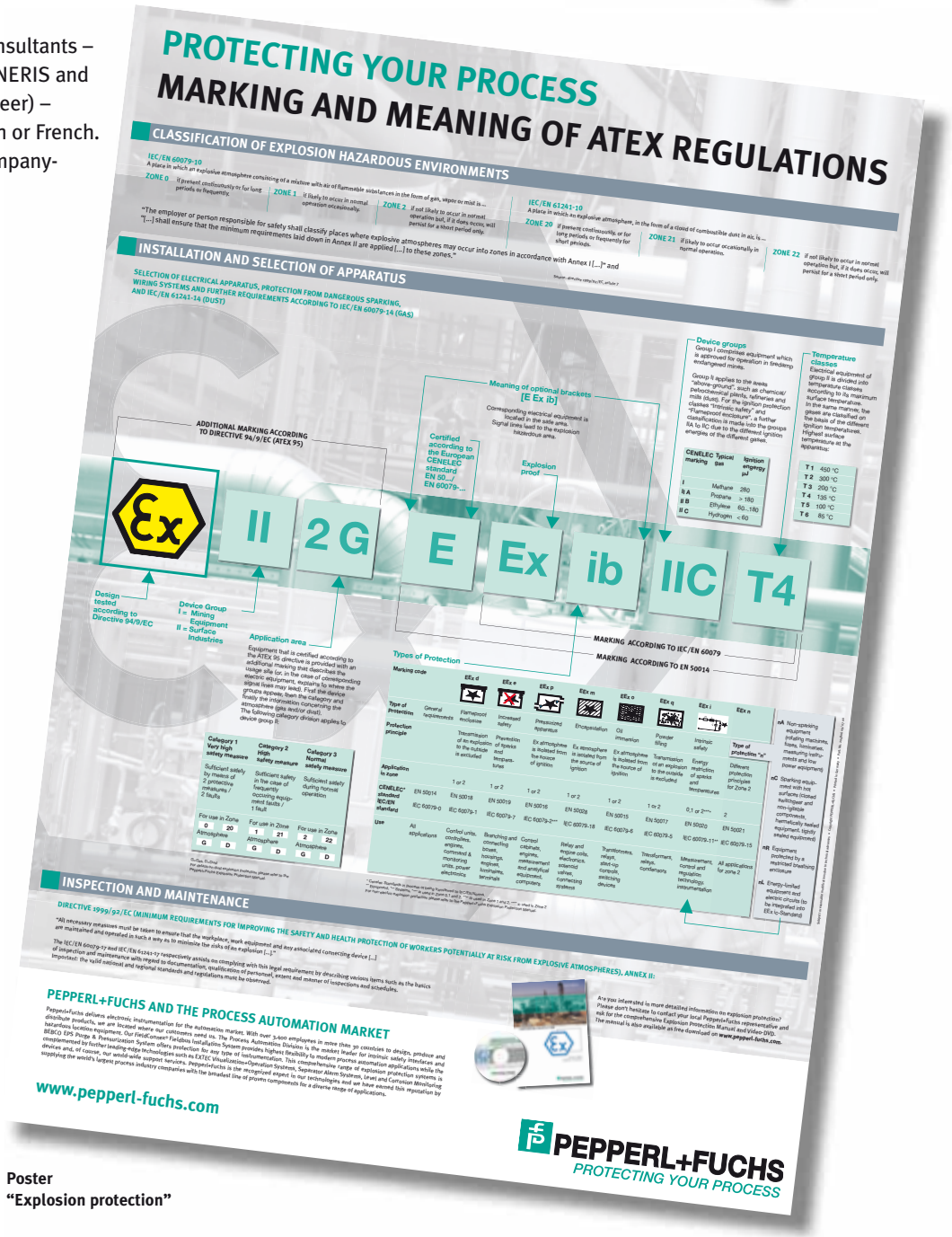
Our internationally experienced training consultants – some holding certificates from the French INERIS and the TÜV Rheinland (Functional Safety Engineer) – deliver training seminars in German, English or French. Please contact us if you wish to discuss company-specific training seminars.

CD-ROM catalog

The Pepperl+Fuchs PA catalog on CD-ROM contains the data sheets for process automation, fill level technology and the entire product offering from Pepperl+Fuchs GmbH. You will find the complete course offering in the Training menu.

Video “Explosion Protection through Intrinsic Safety”

The technical introduction to explosion protection is easier with the Pepperl+Fuchs explosion protection video. It communicates initial information and is used in part as a teaching aid in the seminars.



Poster “Explosion protection”

OUR TRAINERS AND CONSULTANTS

Dr. Hildebrandt

TÜV Functional Safety Engineer in the area of Safety Instrumented Systems in accordance with the TÜV Functional Safety Program, and thus your specialist for all issues concerning SIL.

Gerhard Jung

Your trainer for all issues concerning explosion protection and functional safety.

Patrick Lerévérend

TÜV Functional Safety Engineer in the area of Safety Instrumented Systems in accordance with the TÜV Functional Safety Program, as well as explosion-protection trainer certified by the French INERIS Institute.

Michael Wenglorz

Your trainer for all issues relating to explosion protection and functional safety.

Thomas Westers

Your trainer for fieldbusses, remote I/O and explosion protection.

Stefanie Graf

Your trainer on all issues concerning fieldbusses and functional safety.

dates · topics
information

PROCESS AUTOMATION – PROTECTING YOUR PROCESS

For over a half century, Pepperl+Fuchs has been continually providing new concepts for the world of process automation. Our company sets standards in quality and innovative technology. We develop, produce and distribute electronic interface modules, Human-Machine Interfaces and hazardous location protection equipment on a global scale, meeting the most demanding needs of industry. Resulting from our world-wide presence and our high flexibility in production and customer service, we are able to individually offer complete solutions – wherever and whenever you need us. We are the recognized experts in our technologies – Pepperl+Fuchs has earned a strong reputation by supplying the world's largest process industry companies with the broadest line of proven components for a diverse range of applications.

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