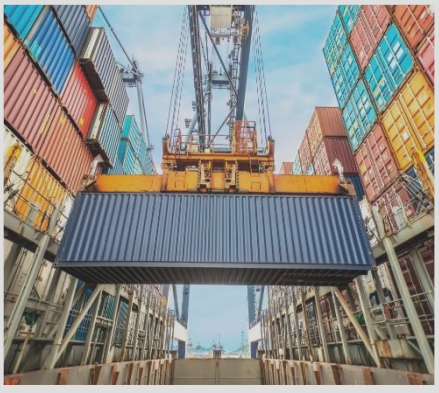
TRAINING 2024



sector

From Risk Management to Performance Improvement, SECTOR has participated in more than 2,500 studies and advisory services with more than 500 clients.(www.sector-group.net).

The core activity of SECTOR lies in the execution of services, whether conducted at its own premises or at those of its clients. The wealth of diverse and enriching experiences is dedicated to enhancing the quality of the trainings featured in its catalogue.

Our trainers are also specialized and experienced engineering consultants. For this reason, they enrich their interventions with numerous case studies. This approach facilitates the assimilation of essential concepts and specific methods taught.

At the conclusion of his training, the learner will possess the keys to address the specific challenges within his company. This is our primary concern and our main objective.

We strive that our materials evolve based on feedback from evaluations and the latest developments in our fields: standards, regulations, implementation guides, best practices...

In addition to training, SECTOR offers help and support for implementing the methods taught and deploying them.

THE THEMES OF OUR TRAININGS

- Risk management and dependability: methods and implementation
- Regulatory and normative references: applications
- Risk management and dependability: applications
- Mastery of systems development
- Logistics support and maintenance: methods, implementations and applications
- Improvement of industrial processes
- Risk and crisis management
- Nuclear sector
- Cybersecurity

The training sessions take place at our offices:

- in Villebon-sur-Yvette (91), near the Massy RER TGV station,
- in Villeurbanne (69), near the Part-Dieu station.

Our training sessions can also be held in your offices to address more specifically your needs.

CONTENTS

Risk management and dependability: methods and implementation

Regulatory and normative references: applications

Risk management and dependability: applications

Mastery of systems development

CONTENTS

Training SF 1

Duration:

3 days
(21 hours)

Dependability

- *Concepts and method*

Objectives

The objectives of this training are to enable participants to acquire:

- Knowledge, reflexes and attitudes for taking dependability activities into account at the appropriate level for an industrial project.
- The means to specify at the right level and with the required precision the requirements for dependability results and demonstration to be met on projects.
- The ability to analyze, evaluate, criticize and validate industrial deliverables regarding dependability.

Program

Introduction

- Why a Dependability Study
- Concepts and definitions: RAMST - Reliability, Availability, Maintainability, Safety, Testability
- Risk Concepts
- Main Reliability Laws

Dependability Activities in the product life cycle

- Allocation of objectives
- Dependability approach and management
- Links with project management

Detailed methods

- Qualitative methods (PHA, FMEA, HAZOP, Zonal Analysis)
- Quantitative methods (Reliability Block Diagrams, Fault Tree Analysis, Event Tree Analysis, Concepts of Markov Graphs and Petri Nets, ...)
- Links with functional analysis

Dependability document review guide

Application to practical case studies

Description of subsystems or products

Qualitative and quantitative analysis (Failure Rates, MTBF, Repair Rates, ...)

Means of obtaining data: Databases, Validity checks

Quantification Methods

- Synthesis of used methods and obtained results
- Comments on difficulties and current limitations (addressing Software dependability and human factors

This training is illustrated with concrete and real examples applied to the main dependability methods used (PHA, FMEA, Fault Trees, Markov Chains, ...).

Training resources

Presentations with illustrated practical case support

Prerequisites

Profile equivalent to level 6, 7 or 8 of national technical and/or scientific education

For who

Project Managers, Design Offices, Methods, R&D, Quality

Trainer

Subject matter expert and/or specialist

Evaluation modalities

Feedback form and self-assessment provided at the end of training

Pedagogical evaluation through exercises and questionnaires

Format and/or Locations

Blended Session Format - In-Person or Remote (PARIS / LYON)

In-Company/On-Site sessions upon request

Price

1 250 € / person for inter-company training

Contact us

For more information
Tel: +33 1 69 59 27 27
formation@sector-group.net

Training SF 2

Duration:

1 day
(7 hours)

Preliminary risk analysis

- *Concepts and method*

Objectives

The objectives of this training are to enable participants to acquire:

- A general knowledge of RAMST parameters (Reliability, Availability, Maintainability, Safety and Testability)
- The principles of the PRA method and its limitations
- The ability to implement a PRA and manage its execution

Program

Introduction to the training

- Why a dependability study ?
- Why a PRA approach ?
- Concepts and definitions, risk Notions

Preliminary Risk Analysis

- Birth of the method
- Specific definitions - Acronyms
- Existing analysis techniques
- PRA Inputs/Outputs
- Process flow
- Application domains
- Functional analysis: A prerequisite step

Implementation of PRA

- Development of the risk matrix
- Elaboration of severity and likelihood scales
- Implementation of risk reduction actions

PRA synthesis

- Conclusions on the method
- Bibliographic references

Case study

- Selection of the subject/topic
- Formation of working groups, if applicable
- Participatory approach to construction
- Presentation of results
- Summary on the case study

The case study will serve to:

- Help understand the nature of the problems to be solved
- Present how the PRA concepts and methods provide a solution
- Approach the practical aspects

The concepts and methods will be presented by the trainer, who will supplement his presentation with simple illustrative examples.

Training resources

Presentations with illustrated practical case support

Prerequisites

Profile equivalent to level 6, 7 or 8 of national technical and/or scientific education

For who

Project Managers, Design Offices, Methods, R&D, Quality

Trainer

Subject matter expert and/or specialist

Evaluation modalities

Feedback form and self-assessment provided at the end of training

Pedagogical evaluation through exercises and questionnaires

Format and/or Locations

Blended Session Format - In-Person or Remote (PARIS / LYON)

In-Company/On-Site sessions upon request

Price

600 € / person for inter-company training

Contact us

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Training SF 3

Duration:

1 day
(7 hours)

FMEA

- *Concepts and method*

Objectives

The objectives of this training are to enable participants to acquire:

- A general knowledge of RAMST parameters (Reliability, Availability, Maintainability, Safety and Testability)
- The principles of the FMEA method and its limitations
- The ability to implement and conduct a functional, hardware, process or procedural FMEA study and manage its execution.

Program

Introduction to the training

- Why a dependability study ?
- Why a FMEA approach ?
- Concepts and definitions, risk Notions

FMEA

- Birth of the method - Definitions - Acronyms
- Inputs/Outputs of FMEA
- Process flow
- Application domains
- FMEA: why? when? at what level?
- Functional analysis, a necessary step

Implementation of the FMEA method

- FMEA variants: SFMEA (Software Failure Mode and Effects Analysis) and Project FMEA
- Means of obtaining data: databases, validity checks
- Comments on current difficulties and limitations (accounting for software reliability and human factors)

FMEA synthesis

- Advantages and disadvantages
- Conclusion on the method
- Bibliographic references

Case study

- Selection of the subject/topic
- Formation of working groups
- Participatory approach to construction
- Presentation of results
- Summary on the case study

The case study will serve to:

- Help understand the nature of the problems to be solved
- Present how the FMEA concepts and methods provide a solution
- Approach the practical aspects

The concepts and methods will be presented by the trainer, who will supplement his presentation with simple illustrative examples.

Training resources

Presentations with illustrated practical case support

Prerequisites

Profile equivalent to level 6, 7 or 8 of national technical and/or scientific education

For who

Project Managers, Design Offices, Methods, R&D, Quality

Trainer

Subject matter expert and/or specialist

Evaluation modalities

Feedback form and self-assessment provided at the end of training

Pedagogical evaluation through exercises and questionnaires

Format and/or Locations

Blended Session Format - In-Person or Remote (PARIS / LYON)

In-Company/On-Site sessions upon request

Price

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Training SF 4

Duration:

1 day
(7 hours)

Fault tree analysis

- *Concepts and method*

Objectives

The objectives of this training are to enable participants to acquire:

- A general knowledge of RAMST parameters (Reliability, Availability, Maintainability, Safety and Testability)
- The principles of the FTA method and its limitations
- The ability to carry out this method in a study or to be able to critique it.

Program

Introduction to the training

- Why a dependability study ?
- Why a FTA approach ?
- Concepts and definitions

FTA

- Birth of the method - Application domains
- Objectives - Interest of the method
- Definitions - Symbolisms
- Preliminary steps

Fault tree construction method

- Boolean reduction and probabilistic treatment
- Failure rates, MTBF and MTTF
- Failure probabilities on demand
- Means of obtaining data: databases, validity checks
- Comments on current difficulties and limitations (accounting for software reliability and human factors)

Fault tree synthesis

- Advantages and disadvantages
- Conclusion on the method
- Bibliographic references

Case study

- Selection of the subject/topic
- Formation of working groups, if applicable
- Participatory construction of the Tree
- Presentation of results
- Summary on the case study

The case study will serve to:

- Help understand the nature of the problems to be solved
- Present how the FTA concepts and methods provide a solution
- Approach the practical aspects

The concepts and methods will be presented by the trainer, who will supplement his presentation with simple illustrative examples.

Training resources

Presentations with illustrated practical case support

Prerequisites

Profile equivalent to level 6, 7 or 8 of national technical and/or scientific education

For who

Project Managers, Design Offices, Methods, R&D, Quality

Trainer

Subject matter expert and/or specialist

Evaluation modalities

Feedback form and self-assessment provided at the end of training

Pedagogical evaluation through exercises and questionnaires

Format and/or Locations

Blended Session Format - In-Person or Remote (PARIS / LYON)

In-Company/On-Site sessions upon request

Price

600 € / person for inter-company training

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Training SF 5

Duration:

1 day
(7 hours)

Cause tree analysis

Principles and method

Objectives

The objective of this training is to enable a pragmatic implementation of the cause tree method and to:

- Recall the objectives and context of the method's creation
- Describe the main steps of the implementation approach and the conditions to be met for success
- Put into practice, as a participant in a cause tree analysis and as a facilitator.

Program

The cause tree method was initially developed by the National Research Institute for Safety (INRS) to assist members of the Health, Safety and Working Conditions Committees (CHSCT) in identifying the proven causes of workplace accidents and proposing measures to reduce the risk of recurrence of such accidents. Not to be confused with the fault tree method, the cause tree method is now used as a powerful analysis method for feedback, applied to accidents but more broadly to near-misses or incidents. It also constitutes an excellent means of taking human factors into account for improving safety.

Objectives of the method

- Context of its development
- Links with other safety analysis and risk management methods

Presentation of the method

- The sequence of phases and tasks to follow
- Information to gather - Conditions for success
- Graphical aids - Construction of the tree

Utilization of the tree

- Qualitative and statistical analyses
- Accounting for organizational and human factors
- Synthesis: proposing risk reduction measures, sustaining and capitalizing

In-depth learning and practical application

- Experiential learning through facilitating participants on a second real-life case study from an industrial facility.

Training resources

Presentations with illustrated practical case support

Prerequisites

Profile equivalent to level 6, 7 or 8 of national technical and/or scientific education

For who

Project Managers, Design Offices, Methods, R&D, Quality

Trainer

Subject matter expert and/or specialist

Evaluation modalities

Feedback form and self-assessment provided at the end of training

Pedagogical evaluation through exercises and questionnaires

Format and/or Locations

Blended Session Format - In-Person or Remote (PARIS / LYON)

In-Company/On-Site sessions upon request

Price

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formation@sector-group.net

Training SF 6

Duration:

1 day
(7 hours)

HAZOP method

Principles and implementation

Objectives

The HAZOP method is integrated into an approach to improve safety and processes for an existing or planned facility, with its advantages:

- Conducting the study within a working group bringing together different disciplines: safety, engineering, operations, maintenance...
- Systematic analysis method related to facilities with fluid circuits.
- Contributing to compliance with safety standards.

Program

General Principles of the HAZOP
(HAZard and OPerability studies)
Method

- Definition, scope of application, history of the method
- Concepts of risk and operability

Description of the method

- Defining the system to be studied
- Understanding the system
- Specific elements of the method
- Presentation of the HAZOP table
- Analysis of malfunctions and implementation of recommendations
- When to use HAZOP ?
- Application of the method on a case study

Progression

- Preparation for the Study
- Formation and Facilitation of the Working Group
- Follow-up on the Working Group's Recommendations

Outcomes of the HAZOP method

- Immediate Outcomes:
  - Improved facility safety
  - Compliance with safety regulations
  - Process improvements, capitalizing on experience
- Subsequent Outcomes:
  - Optimized maintenance through reliability
  - Predictive incident analysis

The role of the HAZOP method in a dependability approach

- Functional analysis
- Preliminary Risk Analysis
- Methods related to HAZOP
- FTAs, State diagrams
- Limitations of the HAZOP method

In-depth Learning and practical application - case study

Training resources

Presentations with illustrated practical case support

Prerequisites

Profile equivalent to level 6, 7 or 8 of national technical and/or scientific education

For who

Project Managers, Design Offices, Methods, R&D, Quality

Trainer

Subject matter expert and/or specialist

Evaluation modalities

Feedback form and self-assessment provided at the end of training

Pedagogical evaluation through exercises and questionnaires

Format and/or Locations

Blended Session Format - In-Person or Remote (PARIS / LYON)

In-Company/On-Site sessions upon request

Price

600 € / person for inter-company training

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Training RN1

Duration:

1 day
(7 hours)

Functional safety according to IEC 61508

Multi-sector perspective

Objectives

The objectives of the training are to provide participants with an overall view of the normative references, methods, and techniques applicable for the development of functionally safe systems that rely on electrical, electronic, and computer technologies.

It constitutes the dependability awareness necessary for any company wishing to operate in the field of safety-related systems.

Program

The different normative references are presented and compared:

- IEC 61508 for the domain of E/E/PE systems (Electrical, Electronic and Programmable Electronic)
- DO 178 (embedded software), DO 254 (hardware), and DO 278 (ground-based software) for aeronautics
- IEC 61511 for industrial processes, IEC 61513 for the nuclear sector
- The Machinery Directive ISO 13849
- ISO 26262 for the automotive domain

Presentation of the IEC 61508 Standard

- Concept of the safety lifecycle
- Notion of "prescription"
- Safety activities
- Analysis of system safety implementation
- Impact on the system development lifecycle
- Implementation example

Analysis of the Safety Integrity Level (SIL) concept

- Introduction to the concept of requirements
- Concept of "Safety Case"
- Presentation of the GAME principle

Sector-specific adaptations: comparison of safety levels and applicable measures

- Aeronautics domain
  - Study of the "Design Assurance Level" (DAL) concept and partitioning of recommendations
- Nuclear domain
  - Study of the concepts of "I&C System Class" and "I&C Function Category" according to IEC 61513 and IEC 61226
  - Presentation of the deterministic approach
- Industrial machinery domain
  - Study of the "Performance Level" (PL) concept and "Architecture Category"
- Automotive domain
  - Study of the concepts of "Safety Goal", "Safety Concept" and ASIL levels

Training resources

Presentations with illustrated practical case support

Prerequisites

Profile equivalent to level 6, 7 or 8 of national technical and/or scientific education

For who

Project Managers, Design Offices, Methods, R&D, Quality

Trainer

Subject matter expert and/or specialist

Evaluation modalities

Feedback form and self-assessment provided at the end of training

Pedagogical evaluation through exercises and questionnaires

Format and/or Locations

Blended Session Format - In-Person or Remote (PARIS / LYON)

In-Company/On-Site sessions upon request

Price

600 € / person for inter-company training

Contact us

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Training RN2

ISO 13849 standard for machinery safety

Duration:

2 days
(14 hours)

Objectives

- Specify and argue about the expected performance of a safety function.
- Qualitatively evaluate the Performance Level (PL) achieved by a safety function.
- Perform the complete qualitative and quantitative analysis of a safety function on a simple safety-related control system chain.

Program

Regarding machinery safety, the ISO 13849 standard provides safety requirements and guidance relating to the design principles and integration of safety-related parts of control systems (SRP/CS), including software design.

Introduction to the dependability approach

- Why a dependability study
- Concepts and definitions

Introduction to the ISO 13849 standard

- Structure of the ISO 13849 standard
- Safety objectives - required Performance Level (PLr)
- Identification and quantification of safety levels
- Characteristics of safety functions
- Validation process

Deliverables of the standard and their positioning in the approach

- External Functional Analysis
- Preliminary Risk Analysis
- Determination of Required Performance Level (PLr) for Safety Functions
- Functional Architectures of Safety Functions
- Evaluation of Achieved Performance Level PL
- Relation to SIL Level: FMEA, Fault Tree Analysis, Common Cause Failure Factor, Code Review (Software Part)...

Dependability tools

- Preliminary Risk Analysis
- Failure Modes and Effects Analysis (FMEA)
- Fault Tree Analysis
- Lessons learned/Experience feedback (RETEX)
- Code Review (software part)
- Testing and Validation

Training resources

Presentations with illustrated practical case support

Prerequisites

Profile equivalent to level 6, 7 or 8 of national technical and/or scientific education

For who

Project Managers, Design Offices, Methods, R&D, Quality

Trainer

Subject matter expert and/or specialist

Evaluation modalities

Feedback form and self-assessment provided at the end of training

Pedagogical evaluation through exercises and questionnaires

Format and/or Locations

Blended Session Format - In-Person or Remote (PARIS / LYON)

In-Company/On-Site sessions upon request

Price

950 € / person for inter-company training

Contact us

For more information
Tel: +33 1 69 59 27 27
formation@sector-group.net

Training RN3

ISO 26262 standard for automotive functional safety

Duration:

2 days
(14 hours)

Objectives

The objective of the training is to provide participants with an overview of the ISO 26262 standard and the applicable methods/techniques for the development of functionally safe systems, based on electrical, electronic and computing technologies, in the automotive sector.

This training does not require knowledge of a particular software language or design method, and it is intended for everyone, even those who are not familiar with the standard.

Program

Introduction to the dependability approach

- Why a dependability study
- Concepts and definitions

Introduction to ISO 26262 Standard

- Structure of ISO 26262
- Safety objectives - ASIL Rating
- Functional Safety Concept
- Technical Safety Concept

Deliverables of the standard and their positioning in the approach

- External Functional Analysis (EFA)
- Preliminary Risk Analysis (PRA)
- Functional Safety Concept
- Internal Functional Analysis (IFA)
- System FMEA
- ASIL Decomposition
- Technical Safety Concept

Dependability tools

- Product FMEA
- Reliability and Statistics
- Fault Tree Analysis
- Lessons learned/Experience feedback (RETEX)
- Architectural Metrics
- Controlling Variability
- Verification and Validation

Training resources

Presentations with illustrated practical case support

Prerequisites

Profile equivalent to level 6, 7 or 8 of national technical and/or scientific education

For who

Project Managers, Design Offices, Methods, R&D, Quality

Trainer

Subject matter expert and/or specialist

Evaluation modalities

Feedback form and self-assessment provided at the end of training

Pedagogical evaluation through exercises and questionnaires

Format and/or Locations

Blended Session Format - In-Person or Remote (PARIS / LYON)

In-Company/On-Site sessions upon request

Price

950 € / person for inter-company training

Contact us

For more information
Tel: +33 1 69 59 27 27
formation@sector-group.net

Training RN4

Duration:

2 days
(14 hours)

EN 5012X standards for railway applications

Railway safety

Objectives

The objective of this training is to provide participants with a precise overview of the current content of the 3 CENELEC standards EN50126, EN50128 and EN50129, to understand their implementation and to highlight the difficult points and significant impacts on the realization process, in particular the use of applicable methods/techniques for the development of functionally safe systems in the railway transportation domain.

Program

The commissioning of a system in the railway domain (urban or rail) is linked to the implementation of a CENELEC reference related to safety. The EN 50129 and EN 50128 standards, although applicable to the signaling subsystem, are considered applicable by major industrials and operators in the absence of other references. This EN 5012X reference applies at all levels (system, hardware, to a lesser extent software), for all new systems, all major modifications, and all clarifications on the expected activities of a safety-related project.

Introduction

- Introduction to the "mother" standard: IEC 61508 and its derivatives
  - Concept of "prescription"
  - Analysis of the safety implementation of an E/E/PE system
  - Impact on the realization process
- Review of functional analysis

Presentation of the 3 current standards

- CENELEC Architecture EN 50126, EN 50128, EN 50129
- Their interlinking and relationship with EN 50159-1 and -2 and EN 50155
- Key Elements:
  - Analysis of the SIL concept and its application to software (SSIL)
  - Introduction to the notion of "requirement"
  - Study of the "safety case" concept
  - Presentation of the GAME principle

Implementation

- Generic RAMS process
- Systematic approach to safety
- Implementation of hardware and software recommendations
- Description of Safety Case(s) - Content, Realization, Analysis, Validation Evidence
- Presentation of the legislative reference: STPG and RFN
- Evaluation, Certification and Cross-acceptance: Evaluation of development and certification process

Discussion on effective implementation and presentation of examples

Training resources

Presentations with illustrated practical case support

Prerequisites

Profile equivalent to level 6, 7 or 8 of national technical and/or scientific education

For who

Project Managers, Design Offices, Methods, R&D, Quality

Trainer

Subject matter expert and/or specialist

Evaluation modalities

Feedback form and self-assessment provided at the end of training

Pedagogical evaluation through exercises and questionnaires

Format and/or Locations

Blended Session Format - In-Person or Remote (PARIS / LYON)

In-Company/On-Site sessions upon request

Price

1 100 € / person for inter-company training

Contact us

For more information
Tel: +33 1 69 59 27 27
formation@sector-group.net

Training RN5

Duration:

2 days
(14 hours)

EN 50128:2011 standard

Software development in the railway domain

Objectives

The objective of this training is to provide participants with a precise overview of the current content of the CENELEC EN50128 standard, to understand its implementation and to highlight the difficult points and significant impacts on the realization process and submission for evaluation/certification according to the CENELEC EN50128 standard, in particular the use of applicable methods/techniques for the development of the software part in the railway transportation domain.

Program

Overview of the EN 50128 standard

- Structure of EN 50128:2011
- Quality assurance
- Competence management
- Generic software vs parameterized software
- Software assurance
- Software requirements specification and validation test specification
- Software architecture/preliminary design and integration test specification L/L and L/H
- Design and Unit Testing
- Choice of language and development tools
- Verification activities: reviews, RCC, AEEL, etc.
- Validation
- Test coverage
- Tool qualification
- Data preparation process
- Evaluation

Focus on difficult points

- Requirements (identification and traceability)
- Different lifecycle phases
- Formal/semi-formal/structured methods
- Modeling
- Language choice
- Automatic code generation
- Verification activities: reviews, RCC, AEEL, etc.
- Data parameterization
- Test coverage (from statement to MCDC "Modified Condition/Decision Coverage")
- Tool qualification
- Anomaly management
- Change management

Training resources

Presentations with illustrated practical case support

Prerequisites

Profile equivalent to level 6, 7 or 8 of national technical and/or scientific education

For who

Project Managers, Design Offices, Methods, R&D, Quality

Trainer

Subject matter expert and/or specialist

Evaluation modalities

Feedback form and self-assessment provided at the end of training

Pedagogical evaluation through exercises and questionnaires

Format and/or Locations

Blended Session Format - In-Person or Remote (PARIS / LYON)

In-Company/On-Site sessions upon request

Price

1 100 € / person for inter-company training

Contact us

For more information
Tel: +33 1 69 59 27 27
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Training RN6

ISO 26262:2018 Part 5 Hardware

Duration:

2 days
(14 hours)

Objectives

The objective of the training is to provide participants with the applicable methods and techniques for Part 5 of the ISO 26262 standard, specific to product development at the hardware level. The training focuses on each stage of the lifecycle and the dependability requirements to be met for hardware design, the metrics (SPFM, LFM...) to target via hardware FMEA methods (hwFMEA, FMEDA or eFMEA) and Fault Tree Analysis, safe design techniques up to hardware validation.

Program

Dependability and ISO 26262

- General overview and recap of ISO 26262
- Hardware-specific particularities
- Concepts and definitions
- General HW dependability principles
- System and HW lifecycle

Hardware safety requirements

- Definition and safety objectives
- Interfaces with software
- Traceability techniques

Hardware Architecture Design

- Specific safety objectives
- Hardware architectural design
- Detailed hardware design

Evaluation of hardware architecture metrics

- Failure Classification
- Single-Point Fault Metric (SPFM)
- Latent Fault Metric (LFM)
- Probabilistic Metric for Random Hardware Failures (PMHF)
- Diagnostic Coverage Rate

Tools and methods for evaluating hardware architecture metrics

- FMEA (hwFMEA, FMEDA, eFMEA)
- FTA (Fault Tree Analysis)
- Failure Rate Evaluation (FIDES, UTEC 80-810 methods...)

Hardware integration and verification

- Specific safety objectives
- Verification methods
- Integration testing methods
- Durability testing methods

Complements to the standard

- Expected deliverables at each lifecycle phase
- Hardware configuration management
- Hardware qualification

Application exercises on HW FMEA and FTA case studies

Training resources

Presentations with illustrated practical case support

Prerequisites

Profile equivalent to level 6, 7 or 8 of national technical and/or scientific education

For who

Project Managers, Design Offices, Methods, R&D, Quality

Trainer

Subject matter expert and/or specialist

Evaluation modalities

Feedback form and self-assessment provided at the end of training

Pedagogical evaluation through exercises and questionnaires

Format and/or Locations

Blended Session Format - In-Person or Remote (PARIS / LYON)

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Price

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Training RN7

ISO 26262:2018 Part 6 Software

Duration:

2 days
(14 hours)

Objectives

The objective of the training is to provide participants with software design methods and techniques applicable to the ISO 26262 standard, specific to software development, to ensure software safety. The training focuses on each stage of the software lifecycle and the dependability requirements to be met for software projects, the definition of software, safe design techniques up to software validation.

Program

Dependability
- Software-specific particularities
- Concepts and definitions
- General principles of software dependability
- System and software lifecycle

Software safety requirements
- Definition and safety objectives
- Interfaces with hardware
- Traceability techniques

Software architecture design
- Specific safety objectives
- Static architecture
- Dynamic architecture
- Model-based design
- Architecture design rules
- Common architecture errors
- Error detection and handling
- Critical software resources
- AEEL (Software FMEA)
- Software design errors

Detailed software design and implementation
- Specific safety objectives
- Programming languages
- Development tools (MBD, IDE)
- Design and coding rules

Software unit testing
- Specific Safety Objectives
- Unit Testing Principles
- Verification Methods
- Static Code Analysis
- Testing Procedures

Software testing (Integration and Validation)
- Specific safety objectives
- Integration and validation testing principles
- Verification methods
- Static and dynamic analysis
- Test cases
- Test coverage
- Test metrics and tools

Complements to the standard
- Expected deliverables at each lifecycle phase
- Compliance evidence
- Plans
- Software configuration management
- Software qualification

Training resources

Presentations with illustrated practical case support

Prerequisites

Profile equivalent to level 6, 7 or 8 of national technical and/or scientific education

For who

Project Managers, Design Offices, Methods, R&D, Quality

Trainer

Subject matter expert and/or specialist

Evaluation modalities

Feedback form and self-assessment provided at the end of training

Pedagogical evaluation through exercises and questionnaires

Format and/or Locations

Blended Session Format - In-Person or Remote (PARIS / LYON)

In-Company/On-Site sessions upon request

Price

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formation@sector-group.net

Training RN8

Duration:

1 day
(7 hours)

IEC 61508 standard - Software

Software development

Objectives

The objective of the intervention is to provide participants with software design methods and techniques applicable to the IEC 61508 standard in order to ensure software safety. The program covers each stage of the software lifecycle (from specification to validation) as well as the expectations of the standard, with a particular focus on software development tools (e.g. Doors, Matlab Simulink Suite) and their relevance in the modern software lifecycle.

Program

Dependability

- Software-specific particularities
- Concepts and definitions
- General principles of software dependability
- System and software lifecycle

Software safety requirements

- Definition and safety objectives
- Interfaces with hardware
- Traceability techniques

Software architecture design

- Specific safety objectives
- Static architecture with Matlab Simulink
- Dynamic architecture
- Model-based design
- Difference between formal (Scade) and semi-formal (Matlab Simulink) design
- Architecture design rules
- Common architecture errors
- Error detection and handling
- Critical software resources
- AEEL (SW FMEA)

Detailed software design and implementation

- Specific safety objectives
- Programming languages
- Development tools (MBD, IDE)
- Capabilities offered by Matlab Simulink
- Design and coding rules
- Source code generation via Matlab Simulink

Software testing (Unit, Integration and Validation)

- Specific safety objectives
- Unit testing principles
- Integration and validation testing principles
- Verification methods
- Static code analysis by Matlab Polyspace
- Test cases
- Test coverage
- Test metrics and tools

Complements to the standard

- Expected Deliverables at Each Lifecycle Phase
- Compliance Evidence
- Plans
- Software Configuration Management
- Software Qualification

Training resources

Presentations with illustrated practical case support

Prerequisites

Profile equivalent to level 6, 7 or 8 of national technical and/or scientific education

For who

Project Managers, Design Offices, Methods, R&D, Quality

Trainer

Subject matter expert and/or specialist

Evaluation modalities

Feedback form and self-assessment provided at the end of training

Pedagogical evaluation through exercises and questionnaires

Format and/or Locations

Blended Session Format - In-Person or Remote (PARIS / LYON)

In-Company/On-Site sessions upon request

Price

600 € / person for inter-company training

Contact us

For more information
Tel: +33 1 69 59 27 27
formation@sector-group.net

Training SA1

Duration :

2 days
(14 hours)

Reliability in electronics

Implementing Normative Models

Objectives

The objectives of this training are to enable participants to:

- Understand the concepts of reliability and the implications of these concepts in assessing availability and safety.
- Integrate these reliability concepts to define reliability tests and utilize their corresponding results.
- Know how to create a reliability dossier in a contractual context.

Program

Definitions and associated mathematical models

- Dependability (Reliability, Availability, Maintainability, Safety, Testability)
- Review of the main necessary mathematical concepts

Dependability methods

- Functional Analysis
- Preliminary Risk Analysis
- FMEA, Fault Tree Analysis
- Reliability Allocations
- Feedback, Testing, Burn-in
- Use of Failure Rates

Reference documents

- Reliability Data Collection
- Predictive λ Calculations (Failure Rates)
- Presentation of Mathematical Formulas Used
- Presentation of Software Facilitating Failure Rate Calculations
- Manufacturer Datasheets

Reliability testing and result processing methods

- Concept of customer risk and supplier risk
- Sizing the number of tests required to demonstrate a reliability objective for a given customer and supplier risk

Failures: origins and classification

- Thermal, vibration, aging, electrical stress origins

Reliability calculations for an electronic card in a system

- System presentation
- System breakdown structure
- Mission profile

Reliability report

- Required input data
- Output data
- Examples of requirement specifications

Training resources

Presentations with illustrated practical case support

Prerequisites

Profile equivalent to level 6, 7 or 8 of national technical and/or scientific education

For who

Project Managers, Design Offices, Methods, R&D, Quality

Trainer

Subject matter expert and/or specialist

Evaluation modalities

Feedback form and self-assessment provided at the end of training

Pedagogical evaluation through exercises and questionnaires

Format and/or Locations

Blended Session Format - In-Person or Remote (PARIS / LYON)

In-Company/On-Site sessions upon request

Price

950 € / person for inter-company training

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Training SA2

Duration :

1 day
(7 hours)

Use of the FIDES method

Global methodology for reliability engineering in electronics

Objectives

FIDES is a methodology for evaluating and controlling reliability. On one hand, it enables a realistic assessment of the reliability of electronic equipment, including systems operating in severe environments (defense systems, aeronautics, transportation, industrial electronics, etc.). On the other hand, it provides a concrete tool for building and controlling this reliability.

Program

Through the identification of contributors to reliability, whether technological, physical or process-related, the FIDES methodology enables actions on definitions throughout the product lifecycle to improve and control reliability.

- Challenges of reliability in electronics
- Nature of predictions
- Presentation of different calculation methods in FIDES (components or COTS)
- Presentation of the process for building and controlling reliability
- Presentation with examples of mission profiles
- Presentation of calculation models used in FIDES by component types
- Example of reliability calculation at the electronic component level
- Example of reliability calculation for Commercial Off-The-Shelf (COTS)
- Example of reliability calculation for subsystems

This training is designed to enable participants to use the FIDES methodology easily.

The FIDES guide will serve as a reference throughout the duration of the training.

Training resources

Presentations with illustrated practical case support

Prerequisites

Profile equivalent to level 6, 7 or 8 of national technical and/or scientific education

For who

Project Managers, Design Offices, Methods, R&D, Quality

Trainer

Subject matter expert and/or specialist

Evaluation modalities

Feedback form and self-assessment provided at the end of training

Pedagogical evaluation through exercises and questionnaires

Format and/or Locations

Blended Session Format - In-Person or Remote (PARIS / LYON)

In-Company/On-Site sessions upon request

Price

600 € / person for inter-company training

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Training SA3

Duration :

2 days
(14 hours)

Durability: mastering long-term reliability

Precision and Validation

Objectives

- Know the statistical models used in durability.
- Know the different phases of the durability approach.
- Understand the methods for constructing and using a durability validation plan (experimental reliability)
- Exploit field failure data (operational reliability).

Program

Introduction

- The role of reliability in dependability and challenges

Statistical reminders applied to reliability

- Terminology and main formulations in reliability
- Distributions used in reliability (Normal, Lognormal, Weibull, Exponential)
- Study of the Weibull model
  - Meaning of parameters β, η, γ
  - Link between β and failure mode

Reliability demonstration

- "Stress/Strength" method
- Phases of reliability-based design
- Data analysis for predictive evaluation

Operational reliability

- Considering customer returns to determine system reliability
  - Point estimation of life distribution parameters
  - Confidence interval estimation of life distribution parameters
- Industrial examples and application exercises

Experimental reliability

- Choosing the type of test to estimate system reliability
- Test sizing: number, duration, and acceptance criteria
- Defining a test profile adapted to the mission profile
- Accelerated testing (defining and using acceleration laws)
- Possessing the basic vocabulary associated with material fatigue phenomena
- Industrial examples and application exercises

Training resources

Presentations with illustrated practical case support

Prerequisites

Profile equivalent to level 6, 7 or 8 of national technical and/or scientific education

For who

Project Managers, Design Offices, Methods, R&D, Quality

Trainer

Subject matter expert and/or specialist

Evaluation modalities

Feedback form and self-assessment provided at the end of training

Pedagogical evaluation through exercises and questionnaires

Format and/or Locations

Blended Session Format - In-Person or Remote (PARIS / LYON)

In-Company/On-Site sessions upon request

Price

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Training SA4

Safety of calculators and computer architectures

Duration :

2 days
(14 hours)

Objectives

Focusing on the aspect of "securing application execution", the objectives of this training are to enable participants to acquire knowledge of the issues related to "zero-defect" development and computer architectures, methods for securing the execution of a program, the ability to meet system-level dependability requirements and principles related to the implementation of a hardware and software component dependability approach within a development entity.

Program

Dependability principles

- Reminder of basic concepts (fault tolerance, etc.)
- Software-specific characteristics
- Risks impacting software execution
- Impact on computer architecture
- Defect typology

Introduction to "correct" software design

- Definition and software-specific characteristics
- Development challenges
- Overview of formal approaches (B Method, SCADE, etc.)

Characteristics of embedded computing

- Presentation of concepts and constraints
- Normative requirements

Techniques for securing program execution

- Hardware redundancy (1002, 2002, 2003, and n00m)
- Software redundancy
- Monitoring and fault detection
- Information coding

Implementation analysis

- Presentation of the "coded processor" used in rail transportation
- Examples of hardware redundancy implementation in the aeronautics domain

Dependability of the software/hardware pair

- Analysis of interactions between software and hardware
- Study of common modes and dependability evaluation
- Validation of the computer application (target testing)

Software verification and validation techniques

- Classical verification techniques (static analysis, code review, etc.) And formal techniques (proof, model checking, etc.)
- Analysis of strengths and weaknesses
- Feedback on the application of these methods

Training resources

Presentations with illustrated practical case support

Prerequisites

Profile equivalent to level 6, 7 or 8 of national technical and/or scientific education

For who

Project Managers, Design Offices, Methods, R&D, Quality

Trainer

Subject matter expert and/or specialist

Evaluation modalities

Feedback form and self-assessment provided at the end of training

Pedagogical evaluation through exercises and questionnaires

Format and/or Locations

Blended Session Format - In-Person or Remote (PARIS / LYON)

In-Company/On-Site sessions upon request

Price

1 100 € / person for inter-company training

Contact us

For more information
Tel: +33 1 69 59 27 27
formation@sector-group.net

Training SA6

Duration :

2 days
(14 hours)

Human factor in high-risk industries

Presentation of the main invariant techniques through concrete examples

Objectives

The human factor, commonly the victim of a negative preconception regarding its impact on safety, reliability, and productivity of systems, constitutes an element of considerable improvement for installations. Taking this dimension into account during design or operation can lead to significant progress.

This training aims to teach those concerned with the human factor how to rigorously and explicitly take this aspect into account.

Program

Introduction to the training

- The human factor in industry
- What to expect from such training?

General presentation of the human factor

- What is the human factor?
- Definition
- Scope covered

Why take the human factor into account, and when?

How to take the human factor into account?

- *In operation:*
  - Objectives and cautions
  - Methods
  - Human factor feedback, activity analyses
  - Expert judgments
  - Results
- At the design stage:
  - Objectives
  - Methods and means to implement
  - Evaluation

Parallel illustration with real examples

To go further...

- Bibliographic references

Training resources

Presentations with illustrated practical case support

Prerequisites

Profile equivalent to level 6, 7 or 8 of national technical and/or scientific education

For who

Project Managers, Design Offices, Methods, R&D, Quality

Trainer

Subject matter expert and/or specialist

Evaluation modalities

Feedback form and self-assessment provided at the end of training

Pedagogical evaluation through exercises and questionnaires

Format and/or Locations

Blended Session Format - In-Person or Remote (PARIS / LYON)

In-Company/On-Site sessions upon request

Price

1 380 € / person for inter-company training

Contact us

For more information
Tel: +33 1 69 59 27 27
formation@sector-group.net

Training MS1

Duration :

2 days
(14 hours)

Functional analysis

From theory to practice

Objectives

Designing safely and cost-effectively while meeting customer needs, specifying and realizing the requirements for a complex system, structuring and organizing feedback... these are just some of the concerns that contractors and industrialists face in their daily activities.
The objectives are to initiate or improve participants' skills through theoretical courses and practical examples in various functional analysis methods.

Program

Introduction to value analysis (VA)

- Concepts and definitions
- The VA approach
- Implementing VA

Introduction to functional analysis

The major foundations governing the control of performance and costs in terms of specification, design and implementation:

- Context of the evolution of industrial practices: the challenges
- Complexity of systems and the network of stakeholders: technical and organizational interfaces
- The necessity to properly frame the problem before solving it
- Mastering solutions: controlling costs, deadlines and risks
- Functional reasoning as a common thread and shared language among stakeholders

Specification and analysis tools

- Principles of functional analysis
- Links with the value analysis approach
- Life cycle phases for a product, process or information system
- External functional analysis:
  - Functional expression of needs
  - System definition: products, processes, services, organizations and usage scenarios
  - Development of functional specification
- Internal functional analysis: connections to dependability: Preliminary Risk Analysis, FMEA and FTA
- Application domains of the different methods based on system specificities and objectives to be achieved
- Case studies

Training resources

Presentations with illustrated practical case support

Prerequisites

Profile equivalent to level 6, 7 or 8 of national technical and/or scientific education

For who

Project Managers, Design Offices, Methods, R&D, Quality

Trainer

Subject matter expert and/or specialist

Evaluation modalities

Feedback form and self-assessment provided at the end of training

Pedagogical evaluation through exercises and questionnaires

Format and/or Locations

Blended Session Format - In-Person or Remote (PARIS / LYON)

In-Company/On-Site sessions upon request

Price

950 € / person for inter-company training

Contact us

For more information
Tel: +33 1 69 59 27 27
formation@sector-group.net

Training MS2

Duration :

1 day
(7 hours)

Requirements management

Concepts and methods for "knowing how to specify requirements"

Objectives

The objectives of the training are to present the process of managing requirements related to complex systems (labeling, attributes, traceability, etc.) and the associated difficulties (managing untraceable requirements, etc.).

At the end of this training, participants will have answers to the issue of "knowing how to specify requirements" and will have the means to write requirements in the best possible way.

Program

Complex systems are becoming increasingly important in industry, regardless of their level of safety.

Standards have been established to define a context for the development and use of these complex computer-based systems. These standards are based on functional safety and therefore the management of functional requirements (what the product does) and safety requirements.

- Reminder on the "mother" standard: IEC 61508 and its derivatives (EN 5012x, DO 178, DO 254, DO 278, IEC 61511 & IEC 61513, ISO 13849, ISO 62061, ISO 26262)
- Reminder on functional analysis
- resentation of the expectations for a requirements management process (formalism and substance)
- Answers to the issue of "knowing how to specify requirements“
- Presentation of the expectations for a requirements verification process
- Focus on difficult points (management of untraceable requirements, consideration of constraints, etc.)
- Discussion on effective implementation and presentation of examples

Training resources

Presentations with illustrated practical case support

Prerequisites

Profile equivalent to level 6, 7 or 8 of national technical and/or scientific education

For who

Project Managers, Design Offices, Methods, R&D, Quality

Trainer

Subject matter expert and/or specialist

Evaluation modalities

Feedback form and self-assessment provided at the end of training

Pedagogical evaluation through exercises and questionnaires

Format and/or Locations

Blended Session Format - In-Person or Remote (PARIS / LYON)

In-Company/On-Site sessions upon request

Price

600 € / person for inter-company training

Contact us

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formation@sector-group.net

Training MS3

Duration :

1 day
(7 hours)

Eco-design

Concepts and method

Objectives

The objectives of the training are to enable participants to acquire:

- A general knowledge of the stakes of eco-design
- The basic principles of eco-design
- An introduction to evaluation tools and methods
- The practical application of these concepts to a specific product by carrying out a case study.

Program

Introduction to the training

- Environmental issues
- Regulatory requirements

Eco-design

- Concepts and definitions, notions of impact
- Existing analysis techniques
- Inputs / outputs
- Presentation of the process
- Available tools
- Bibliographic references

Implementation of LCA

- Principle of life cycle analysis (LCA)
- Proposed approach
- Data collection

EIME software tool

- Interfaces
- Product modeling
- Main indicators

Case study

- Topic selection
- Formation of working groups, if applicable
- Presentation of results
- Summary of the case study

The case study will serve to:

- Help understand the nature of the problems to be solved
- Present how LCA concepts and methods provide a solution
- Approach the practical side

The concepts and methods will be presented by the trainer, who will supplement his presentation with simple illustrative examples.

Training resources

Presentations with illustrated practical case support

Prerequisites

Profile equivalent to level 6, 7 or 8 of national technical and/or scientific education

For who

Project Managers, Design Offices, Methods, R&D, Quality

Trainer

Subject matter expert and/or specialist

Evaluation modalities

Feedback form and self-assessment provided at the end of training

Pedagogical evaluation through exercises and questionnaires

Format and/or Locations

Blended Session Format - In-Person or Remote (PARIS / LYON)

In-Company/On-Site sessions upon request

Price

600 € / person for inter-company training

Contact us

For more information
Tel: +33 1 69 59 27 27
formation@sector-group.net

Training MS4

Duration :

0,5 day
(3,5 hours)

EN 45545 standard - Fire Smoke

Railway safety

Objectives

The objective of this training is to enable participants to have a simplified approach to the current content of EN45545, to understand its requirements, and to propose a methodology that meets customer expectations. This training provides the basis for the methodology to carry out "fire/smoke" studies for all European and international customers according to their needs.

Program

The training focuses on the most important parts of EN45545 and the details of the study implementation method, particularly regarding groupings, re-evaluation, and solutions that can help resolve cases of non-compliance.

Introduction to EN45545

- Structure of EN45545
- Objectives
- Main definitions

Methodology

- Proposal of an approach
- Key elements:
  - Point-by-point flowchart
  - Grouping rules
  - Re-evaluation
  - Exceptions

Presentation of the FCIL (official UNIFE template)

- Explanation of the stakes
- Presentation of the document

Exercises

Training resources

Presentations with illustrated practical case support

Prerequisites

Profile equivalent to level 6, 7 or 8 of national technical and/or scientific education

For who

Project Managers, Design Offices, Methods, R&D, Quality

Trainer

Subject matter expert and/or specialist

Evaluation modalities

Feedback form and self-assessment provided at the end of training

Pedagogical evaluation through exercises and questionnaires

Format and/or Locations

Blended Session Format - In-Person or Remote (PARIS / LYON)

In-Company/On-Site sessions upon request

Price

600 € / person for inter-company training

Contact us

For more information
Tel: +33 1 69 59 27 27
formation@sector-group.net

Training SM1

Duration :

2 days
(14 hours)

Logistics support

Applications in industrial and military environments

Objectives

The objective of this training is to explain how Logistics Support can be applied to industrial or military projects using a pragmatic approach.

The main aspects covered are the general principles of Logistics Support, the integration of activities into the product process, the activities to be carried out, the applicable standards and methods, the available tools, the essential points, and the mistakes to avoid.

Program

Introduction to ILS

- Basic concept, context
- History and evolution of the concept
- Key dates
- Concepts and definitions
- Means and objectives of Support
- General principles of the Support System

Support elements:

- Packaging, handling, storage, transportation
- Documentation
- Tooling...

Logistics support analysis

- The LSA program
- Explanation of the MIL-STD-13881A standard
- Details of LSA tasks and link with other project activities.
- Logistics Support Analysis Baseline (LSAB)

ILS management

- ILS stakeholders
- Different integration axes
- Implementation principles
- Main ILS activities

Fundamental methods of ILS

- Establishment of logistics breakdowns
- Contribution of Dependability to LSA studies
- "Reliability Centered Maintenance"
- Level Of Repair Analysis (LORA)
- Spare parts provisioning
- Life Cycle Cost (LCC) evaluation and optimization

Introduction to maintenance in operational condition (MOC)

- MOC engineering tasks

Application to a real case

- Description of subsystems or products
- Qualitative and quantitative analysis
- Summary of methods used, and results obtained

The 2 days will be complemented by a specific day; either oriented towards the industrial environment or the military environment, according to the participants' preferences.

The training may be complemented by a day of practical application.

Training resources

Presentations with illustrated practical case support

Prerequisites

Profile equivalent to level 6, 7 or 8 of national technical and/or scientific education

For who

Project Managers, Design Offices, Methods, R&D, Quality

Trainer

Subject matter expert and/or specialist

Evaluation modalities

Feedback form and self-assessment provided at the end of training

Pedagogical evaluation through exercises and questionnaires

Format and/or Locations

Blended Session Format - In-Person or Remote (PARIS / LYON)

In-Company/On-Site sessions upon request

Price

950 € / person for inter-company training

Contact us

For more information
Tel: +33 1 69 59 27 27
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Training SM2

Maintenance engineering and its tools (RCM / MBF / RCA…)

Duration :

2 days
(14 hours)

Objectives

he objectives of the training are to provide the tools and methods that will enable maintenance decision-makers to take the right directions.

- Concrete presentation of preventive maintenance optimization methods based on reliability, such as OMF, RCM, MBF, RBI, AP913. Explanation of their fields of application, their limits, and maintenance concepts.
- Explanation of the links between these methods and longer-term considerations, such as the development of a renewal plan for an industrial asset.

Program

Maintenance function

- New maintenance challenges
- Maintenance and its components
- Medium and long-term considerations

Maintenance plan optimization methods

- Different methods (RCM, OMF, MBF, RBI, AP 913…)
- Their fields of application
- Their limitations
- Their complementarities
- Expected results

Detail of reliability-based optimization methods

- The interest and opportunity of the functional approach
- Analysis of operation (functional role of facilities)
- Analysis of critical malfunctions through failures and consideration of feedback from experience
- Selection of Maintenance Tasks (SMT) by taking risk into account in maintenance decisions

Spare parts management strategy

- Links with optimization methods
- Logical decision diagram
- Practical applications

Maintenance, renovation or renewal of industrial assets

- Principles of total cost of ownership (or LCC)
- Interest, scope of application and implementation difficulties
- Consideration of risk in renovation or renewal decisions
- Further exploration and practical application

Training resources

Presentations with illustrated practical case support

Prerequisites

Profile equivalent to level 6, 7 or 8 of national technical and/or scientific education

For who

Project Managers, Design Offices, Methods, R&D, Quality

Trainer

Subject matter expert and/or specialist

Evaluation modalities

Feedback form and self-assessment provided at the end of training

Pedagogical evaluation through exercises and questionnaires

Format and/or Locations

Blended Session Format - In-Person or Remote (PARIS / LYON)

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Price

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Training SM3

Duration :

3 days
(21 hours)

Progress approach

5S Method, Preventive Maintenance Plan, Operating Procedures

Objectives

- What tools are available to generate progress efficiently?
- How to implement a progress approach?

These are two topical questions for any manager that this training aims to answer. Indeed, who doesn't talk about continuous improvement and progress approaches...but how to take the step and in what way?

Program

Day 1: The 5S method

Presentation of the 5S method

- What is the 5S method
- What are the tools to implement it
- How to manage the implementation
- Presentation of concrete examples

Application

- Scenario/photo-based situations
- Small group reflection
- Sharing and discussion

Day 2: Optimized preventive maintenance plan

Presentation of the MBF method

- What is the MBF method
- What are the tools to implement it
- How to manage the implementation
- Presentation of concrete examples

Application

- Application based on a concrete example
- Small group reflection
- Sharing and discussion

Day 3: Preventive maintenance operating procedure

Presentation of the method

- How to implement your operating procedures
- What are the tools to implement it
- How to manage the implementation
- Presentation of concrete examples

Application

- Application based on a concrete example
- Small group reflection
- Sharing and discussion

End of the day

- Comprehension questionnaire
- Exchanges

Training resources

Presentations with illustrated practical case support

Prerequisites

Profile equivalent to level 6, 7 or 8 of national technical and/or scientific education

For who

Project Managers, Design Offices, Methods, R&D, Quality

Trainer

Subject matter expert and/or specialist

Evaluation modalities

Feedback form and self-assessment provided at the end of training

Pedagogical evaluation through exercises and questionnaires

Format and/or Locations

Blended Session Format - In-Person or Remote (PARIS / LYON)

In-Company/On-Site sessions upon request

Price

1 500 € / person for inter-company training

Contact us

For more information
Tel: +33 1 69 59 27 27
formation@sector-group.net

Training SM4

Asset management and maintenance contracts

What is the best choice and how to position oneself in a sustainable way?

Duration :

1 day
(7 hours)

Objectives

- What are the determining criteria to take into account for the development of the outsourcing policy?
- How to contractualize the outsourcing policy?

Here are two topical questions for any asset manager that this training aims to answer. Indeed, who doesn't talk about outsourcing, externalization..., but how to take the step and in what way?

Program

Introduction
- General context
- Training objective
- Regulatory framework

Analysis of the existing situation
- Inventory and diagnosis of facilities
- Analysis of existing contracts
- Technical file reconciliation
- Regulatory inspections
- Performance monitoring
- Use of CMMS tools

Needs analysis
- Intrinsic needs of facilities or equipment
- Needs and requirements of operators and users
- Needs and requirements of the contract manager

Organization project
- Possible organization solutions
- The different research axes for optimization
- The optimal organization project

Drafting a special technical specifications document (STSD)
- Organization and content of STSD
- Fixed-price contract?
- Monitoring and progress indicators
- How to compare offers?

Presentation of concrete examples
- Assets
- Industrial facilities

Training resources

Presentations with illustrated practical case support

Prerequisites

Profile equivalent to level 6, 7 or 8 of national technical and/or scientific education

For who

Project Managers, Design Offices, Methods, R&D, Quality

Trainer

Subject matter expert and/or specialist

Evaluation modalities

Feedback form and self-assessment provided at the end of training

Pedagogical evaluation through exercises and questionnaires

Format and/or Locations

Blended Session Format - In-Person or Remote (PARIS / LYON)

In-Company/On-Site sessions upon request

Price

600 € / person for inter-company training

Contact us

For more information
Tel: +33 1 69 59 27 27
formation@sector-group.net

Training AP1

Duration :

2 days
(14 hours)

Process FMEA

And Flow Chart

Objectives

The objectives of the training are to explain how to use the FMEA method for the analysis of processes in the industrial field.

The main elements to identify and/or determine are the complete flow diagram, the important product characteristics, the influential process parameters and their interactions, a rating grid adapted to the production context, preventive and corrective actions, their implementation and their effectiveness.

Program

Objectives and principles of Process FMEA

- Positioning of Process FMEA in the industrialization approach

Link between the Flow Diagram and Process FMEA

- Preparation of the study
- Overall approach:
  - ✓ Identify actual or potential product anomalies
  - ✓ Determine causes of anomalies at the process level
  - ✓ Define the severity of the consequences of anomalies through a qualitative analysis:
    - Defect (description)
    - Causes (failure)
    - Effects (consequences)
    - Monitoring plan
  - ✓ *Quantify the risks of anomalies*
    - Occurrence
    - Detection
    - Severity
  - ✓ Assess the criticality and define the criticality threshold

Flow diagram

- Know and sequence the elementary operations
- Highlight the product characteristics
- Define the process parameters

Corrective and/or preventive action plan

- Define actions:
  - Solutions,
  - Responsibilities,
  - Planning
- Evaluate the predictive effectiveness of actions.

The training may be complemented by a day of practical applications.

Training resources

Presentations with illustrated practical case support

Prerequisites

Profile equivalent to level 6, 7 or 8 of national technical and/or scientific education

For who

Project Managers, Design Offices, Methods, R&D, Quality

Trainer

Subject matter expert and/or specialist

Evaluation modalities

Feedback form and self-assessment provided at the end of training

Pedagogical evaluation through exercises and questionnaires

Format and/or Locations

Blended Session Format - In-Person or Remote (PARIS / LYON)

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Price

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formation@sector-group.net

Training AP4

LEAN and its continuous improvement tools

Duration :

2 days
(14 hours)

Objectives

Techniques for improving the performance of work organizations are an integral part of Lean.

The Lean concept was developed by Toyota in the 1940s.

The purpose of this training is to raise participants' awareness of the importance of implementing a Lean approach in the company and to emphasize some of its most widely used tools, which are essential to any continuous improvement plan.

Program

Welcome

Reception, introduction of participants and gathering of their expectations.

Presentation of Lean

- Typology and reduction of waste
- Lean tools
- Humans at the center of the process
- Paradigm shift brought by Lean

Development of basic tools and exercises

he 5 Whys
One of the most widely used problem-solving tools

Ishikawa
Finding the causes of an identified effect

Pareto diagram
How to determine the priority actions to decide on

The 5S
Sorting and cleaning method with multiple induced benefits

Brainstorming
Unleashing spontaneous creativity

PDCA
A fundamental element of continuous improvement

Action plan
Building an efficient action plan

VSM
Mapping flows and highlighting waste

Kanban
Organizing flows

Training resources

Slideshows and exercises

Prerequisites

Profile equivalent to level 6, 7, or 8 of the national technical and/or scientific education

For who

Management and production staff, scheduling, purchasing, or supply personnel

Trainer

Subject matter expert and/or specialist

Evaluation modalities

Feedback form and self-assessment provided at the end of training

Pedagogical evaluation through exercises and questionnaires

Format and/or Locations

In-person (in Paris)

In-house sessions upon request

Price

1 380 € / person for inter-company training

Contact us

For more information:
Tel: +33 1 69 59 27 27
formation@sector-group.net

Training MP1

Duration :

2 days
(14 hours)

Project management

How to control costs, schedules and quality?

Objectives

The objectives of the training are to provide any manager likely to be functionally involved in a project with the necessary foundations for proper structuring and organization of the project.

It primarily relies on the ISO 10006 standard, which constitutes the main reference for project management in France and internationally. Complementary references such as the French "loi MOP" or the PMBoK will also be covered.

Program

General project management concepts

- Cost, Schedule, Performance triad, project typologies, main references

Project structuring

- Phases, milestones, reviews, V-cycle, iterative closed-loop process
- Main project actors (Client, Contractor, etc.), client-supplier relationship

Project documentation

- Management Documentation: Specifications and management plan, work breakdown structure
- Technical Documentation: Requirements Specification, Technical Needs Specification, Definition File, Definition Justification File, Manufacturing File, Acceptance File, etc.

Quality assurance in projects

- Qualification, acceptance
- Configuration management, control of changes and non-conformities

Integrated logistics support and dependability in a project

- Functional and dysfunctional areas, main Dependability activities, positioning in the project timeline
- Concept of Main System/Support System, components of the support system (spares, tooling, etc.)

Cost, schedule, and resource management

- Cost control (estimation, cost containment, correlation between expenditure and physical progress)
- Schedule control (planning, PERT, GANTT, progress monitoring indicators)
- Resource management

Project risk management concepts

- General considerations, overall project risk management approach

Training resources

Presentations with illustrated practical case support

Prerequisites

Profile equivalent to level 6, 7 or 8 of national technical and/or scientific education

For who

Project Managers, Design Offices, Methods, R&D, Quality

Trainer

Subject matter expert and/or specialist

Evaluation modalities

Feedback form and self-assessment provided at the end of training

Pedagogical evaluation through exercises and questionnaires

Format and/or Locations

Blended Session Format - In-Person or Remote (PARIS / LYON)

In-Company/On-Site sessions upon request

Price

950 € / person for inter-company training

Contact us

For more information
Tel: +33 1 69 59 27 27
formation@sector-group.net

Training MP2

Project risk management

Duration :

2 days
(14 hours)

Training resources

Presentations with illustrated practical case support

Prerequisites

Profile equivalent to level 6, 7 or 8 of national technical and/or scientific education

For who

Project Managers, Design Offices, Methods, R&D, Quality

Trainer

Subject matter expert and/or specialist

Evaluation modalities

Feedback form and self-assessment provided at the end of training

Pedagogical evaluation through exercises and questionnaires

Format and/or Locations

Blended Session Format - In-Person or Remote (PARIS / LYON)

In-Company/On-Site sessions upon request

Price

950 € / person for inter-company training

Contact us

For more information
Tel: +33 1 69 59 27 27
formation@sector-group.net

Objectives

Completing projects within budgeted costs, meeting deadlines, and satisfying quality requirements is only possible through perfect risk management.

The objectives of this training are to provide project managers and project team members with a true "risk culture" and to teach them different methods for managing risks.

Program

Overview

- What is a risk?
- Sources of risks based on project characteristics
- Risk typologies
- Actors and roles in risk management
- Risk management as seen by standards (ISO 31000, ISO 9001, ISO 10006, ISO 27000, etc.)

Pre-project phase

- Risk analysis in the commercial or investment phase
- Consideration in client proposals, without losing sight of the competitive aspect and/or in investment schemes

Execution phase

- Risk Management Plan
- Identification: brainstorming, databases, lessons learned (feedbacks), expert opinions...
- Determination of severity and probability scales: concept of criticality
- Risk assessment and their impacts in terms of severity and probability of occurrence
- Quantification of these impacts on cost, schedule, quality, reputation...
- Prioritization based on the specific stakes of each project
- Management of the most critical risks
- Risk reduction actions: reduction, transfer, control...

Documentation system

- Risk sheets, risk management dashboard, action tracking

Organization and responsibilities

- Role of the project risk manager and the role of each team member
- Role of external stakeholders, suppliers, subcontractors, partners, public authorities...

Project risks / Enterprise risks

- Alerts and impact of project risks on the company

Lessons learned and knowledge sharing

- Enrichment of databases, debriefing, summary notes...
- Communication and awareness for other company stakeholders

Training MP3

Duration :

2 days
(14 hours)

Crisis management

From theory to methods

Objectives

The objectives of this training are to help participants acquire:

- Knowledge of the reflexes and attitudes to adopt in order to strengthen their ability to manage the unexpected,
- The means to effectively and methodically manage a crisis in order to limit its consequences,
- The ability to prepare for the operational implementation of a crisis management team.

Program

General principles

- Crisis management and emergency management
- Definition of a Crisis Management Structure
- Notion of immediacy

Decision-making body: crisis management team

- Composition, competencies
- Alert scheme
- Organization, coordination, capitalization
- Building operational responses to a crisis
- Monitoring and weak signals

Tools and methods

- Logbooks (incident logs)
- Crisis Management Procedures
- Crisis kit and reflex sheets

Practical case: crisis simulation

- Exercise to simulate the Crisis Management Team based on a scenario specially developed to adapt to your business issues and professional environment.
- Material and Human Resources
- Information Policy: Internal and External Communication
- Degraded Mode
- Crisis Exit
- Lessons Learned (Feedbacks)

This training is offered on the basis of a multidisciplinary approach to Crisis Management and is structured around concrete and real examples.

Training resources

Presentations with illustrated practical case support

Prerequisites

Profile equivalent to level 6, 7 or 8 of national technical and/or scientific education

For who

Project Managers, Design Offices, Methods, R&D, Quality

Trainer

Subject matter expert and/or specialist

Evaluation modalities

Feedback form and self-assessment provided at the end of training

Pedagogical evaluation through exercises and questionnaires

Format and/or Locations

Blended Session Format - In-Person or Remote (PARIS / LYON)

In-Company/On-Site sessions upon request

Price

950 € / person for inter-company training

Contact us

For more information
Tel: +33 1 69 59 27 27
formation@sector-group.net

Training SN1

Duration :

0,5 day
(3,5 hours)

Safety culture

INSAG4 reference

Objectives

The objectives of this training are both to understand the fundamental requirements for individual and collective behaviors that allow acquiring a safety culture in line with the expectations of the INB (Nuclear Facilities) order, but also to be able to extend these fundamentals to the practice of any potentially dangerous industrial activity by promoting the adoption of concrete measures at all levels to strengthen safety/security.

Program

Safety culture is now an essential requirement in the nuclear industry, as per the 1984 quality order, replaced by the INB (Nuclear Facilities) order of February 2012.

Context of the creation of the "Safety Culture" reference

- Role of the International Atomic Energy Agency (IAEA)
- Post-Chernobyl
- Bases for evaluating Safety Culture

Definition of "Safety Culture"

- Human behaviors
- Prescribed and actual behaviors
- Use of procedures

Universal characteristics of "Safety Culture"

- Structures
- Attitudes

Requirements imposed

- On those responsible for organizational policies
- On managers
- On individuals

Assessment elements

- For organizations
- For individuals

Introduction to the INB (Nuclear Facilities) order of February 2012

- EIPs
- AIPs

Training resources

Presentations with illustrated practical case support

Prerequisites

Profile equivalent to level 6, 7 or 8 of national technical and/or scientific education

For who

Project Managers, Design Offices, Methods, R&D, Quality

Trainer

Subject matter expert and/or specialist

Evaluation modalities

Feedback form and self-assessment provided at the end of training

Pedagogical evaluation through exercises and questionnaires

Format and/or Locations

Blended Session Format - In-Person or Remote (PARIS / LYON)

In-Company/On-Site sessions upon request

Price

600 € / person for inter-company training

Contact us

For more information
Tel: +33 1 69 59 27 27
formation@sector-group.net

Training SN2

Duration :

2 days
(14 hours)

Nuclear safety

Regulation, demonstration of safety and application guides for design

Objectives

The objectives of the training are to introduce participants to the "world" of nuclear safety and its requirements :

- Understand the consequences of safety failures,
- Be led to understand the regulatory framework,
- To design, operate and decommission a nuclear facility in a safe manner.

Program

General definitions

- Nuclear security,
- Nuclear safety,
- Protection of interests,
- ALARA

Regulatory framework

- The regulatory pyramid and the role of international bodies,
- The role of ASN,
- The safety reference,
- The INB order.

Safety demonstration

- Defense in depth,
- Deterministic method,
- Probabilistic method,
- Reliability and failure of safety functions,
- Reason's model approach, human factor.

Nuclear operating classification

- of a nuclear facility (INB),
- INES Scale,
- Radiological classification,
- Waste classification,
- …

Design rules and guides

- ASN guides and RFS,
- RCC-M, E, ..,
- …

Analysis of nuclear accidents

- Tchernobyl,
- Fukushima,
- Hypothetical accident scenarios.

Training resources

Presentations with illustrated practical case support

Prerequisites

Profile equivalent to level 6, 7 or 8 of national technical and/or scientific education

For who

Project Managers, Design Offices, Methods, R&D, Quality

Trainer

Subject matter expert and/or specialist

Evaluation modalities

Feedback form and self-assessment provided at the end of training

Pedagogical evaluation through exercises and questionnaires

Format and/or Locations

Blended Session Format - In-Person or Remote (PARIS / LYON)

In-Company/On-Site sessions upon request

Price

950 € / person for inter-company training

Contact us

For more information
Tel: +33 1 69 59 27 27
formation@sector-group.net

Training SN3

Duration :

2 days
(14 hours)

Probabilistic safety assessment of pressurized water reactors

Concepts and methods

Objectives

The objectives of the training are to introduce participants to the existing methods for Probabilistic Safety Assessment (PSA) of nuclear power plants.

The trainee will be led to know how to implement a complete approach:

- Identification of initiating events and their quantification,
- Definition of the set of associated accident sequences, taking into account system failures and human errors, and their quantification.

Program

Risk awareness

Awareness towards tools

- Event Tree
- Fault Tree Analysis
- Risk Spectrum

Method for developing a Level 1 - Probabilistic Safety Assessment (PSA)

- Role, objectives, uses
- Development principles (functional analysis, modeling)

PSA Level 1

- Parameter estimation
- Common cause failure
- Human factor
- Quantification of accident sequences
- Importance analysis

Particularities of PSA Level 1

- Level 1 PSA related to fire
- Level 1 PSA related to seismic events

PSA Level 2

- Objectives
- Interfaces between PSA Level 1 and Level 2
- Applications

Training resources

Presentations with illustrated practical case support

Prerequisites

Profile equivalent to level 6, 7 or 8 of national technical and/or scientific education

For who

Project Managers, Design Offices, Methods, R&D, Quality

Trainer

Subject matter expert and/or specialist

Evaluation modalities

Feedback form and self-assessment provided at the end of training

Pedagogical evaluation through exercises and questionnaires

Format and/or Locations

Blended Session Format - In-Person or Remote (PARIS / LYON)

In-Company/On-Site sessions upon request

Price

950 € / person for inter-company training

Contact us

For more information
Tel: +33 1 69 59 27 27
formation@sector-group.net

Training SN4

Duration :

2 days
(14 hours)

Radiation protection

Radioactivity, radiation, doses, protection and regulations

Objectives

The objectives of the training are to introduce participants to ionizing radiation and radiation protection (monitoring and prevention measures) implemented in the nuclear industry.

The trainee will be led to understand aspects related to radioactivity, ionizing radiation, dosimetry and the ALARA principle, monitoring and prevention measures, regulations, and calculation tools.

Program

Radioactivity

- Nature and description,
- Ionizing radiation.

Dosimetry

- Definition of different types of doses and their estimation,
- Concrete examples of radiation sources and associated dosimetric impact,
- Internal and external exposure,
- Categories of stakeholders in nuclear field.

Radiation protection classification

- Radiological zoning,
- Classification of containment systems

Radiological protection means

- According to the type of radiation,
- According to the type of exposure (internal or external).

Radiological monitoring means

- Types of measurements according to particles,
- Detection and control systems

Kinetics of radioactive particle transfer

- From the environment to the human body and within the human body

Regulations

- International pyramid,
- TSN law and environmental code
- The order of May 15, 2006,
- The order of September 1, 2003

Le principe ALARA

- Cost / dose balance,
- Application.

Calculation tools

- Deterministic transport codes,
- Stochastic transport codes.

Application to a radiation protection study

Training resources

Presentations with illustrated practical case support

Prerequisites

Profile equivalent to level 6, 7 or 8 of national technical and/or scientific education

For who

Project Managers, Design Offices, Methods, R&D, Quality

Trainer

Subject matter expert and/or specialist

Evaluation modalities

Feedback form and self-assessment provided at the end of training

Pedagogical evaluation through exercises and questionnaires

Format and/or Locations

Blended Session Format - In-Person or Remote (PARIS / LYON)

In-Company/On-Site sessions upon request

Price

950 € / person for inter-company training

Contact us

For more information
Tel: +33 1 69 59 27 27
formation@sector-group.net

Training SN5

Duration :

1 day
(7 hours)

The order of February 7, 2012, on Basic Nuclear Installations (BNI)

Provisions applicable to all activities

Objectives

In 2006, an overhaul of the legal framework governing nuclear industry activities was initiated with the "TSN" law, since codified in the Environmental Code. This law was further detailed by several decrees as well as by the "INB" order, which adds a third tier to this regulatory framework to specify the rules, prescriptions, levels, and conditions of execution.

Since July 1, 2013, this order has set a scope applicable to all phases of the life of Nuclear Facilities for decades to come and allows for the structuring of engineering study activities as well as operation and decommissioning.

The objectives of the training are to present a comprehensive overview of the order and then to delve deeper into the organizational methods and the demonstrations expected to comply with it (titles II and III).

Program

General regulatory framework

- Regulatory pyramid
- TSN Law
- Main regulatory actors
- Abrogated regulations
- New concepts

Presentation of the INB order

- Présentation/origine/structure
- Understanding the domains covered by the order

Organization and responsibility

- Monitoring of external contractors
- Policy regarding the protection of interests
- Understanding and application of the concepts of EIP, AIP, and ED
- Management of deviations
- Continuous improvement

Nuclear safety demonstration

- Defense-in-depth principle
- Objective and implementation of a safety demonstration
- Linking the safety demonstration with the concepts of EIP, AIP, and ED defined in Title II.

Complements

- Control of nuisances
- Introduction to ESPN
- Waste management
- Emergency management
- Special and miscellaneous provisions

TSN = Transparency in Nuclear Safety
EIP = Important Element for Protection
AIP = Important Activity for Protection
ED = Defined Requirement

Training resources

Presentations with illustrated practical case support

Prerequisites

Profile equivalent to level 6, 7 or 8 of national technical and/or scientific education

For who

Project Managers, Design Offices, Methods, R&D, Quality

Trainer

Subject matter expert and/or specialist

Evaluation modalities

Feedback form and self-assessment provided at the end of training

Pedagogical evaluation through exercises and questionnaires

Format and/or Locations

Blended Session Format - In-Person or Remote (PARIS / LYON)

In-Company/On-Site sessions upon request

Price

600 € / person for inter-company training

Contact us

For more information
Tel: +33 1 69 59 27 27
formation@sector-group.net

Training CY1

Duration :

1 day
(7 hours)

Cybersecurity awareness

For an awareness of risks

Objectives

This awareness session will help employees understand the challenges related to cybersecurity within the company. It aims to explain what threats are and the sources of risks for the company's IT system. Following this training, vigilance should be increased, and good cybersecurity hygiene practices will be acquired. It also allows for better dialogue with IT managers to enter a form of continuous security improvement.

Program

Understanding cybersecurity

- When we say "security", we mean "protection"
- Observations, damages, and impacts on businesses
- What are threats?
- What are the attackers' objectives?

Fundamentals

- Confidentiality
- Integrity
- Identity
- Non-repudiation

Challenges for the company

- Maintaining operations
- Protecting its intellectual property
- Safeguarding its secrets and personal data

Obligations: regulations

- Why? Are you affected?
- RGPD, but also medical data
- NIS & NIS2
- Sector-specific regulations
- General: LPM and ANSSI

Cybersecurity hygiene

- Network and Information System concepts
- Workstation protection (locking, USB drives, etc.)
- Passwords, password vaults
- System and browser warnings
- Smartphones
- Being involved in security (being part of the solution, not the problem). Communicating with IT.
- Examples and exercises

Conclusion

- References (ANSSI or sector-specific)
- Vigilance

Training resources

Presentations with illustrated practical case support

Prerequisites

Profile equivalent to level 6, 7 or 8 of national technical and/or scientific education

For who

Project Managers, Design Offices, Methods, R&D, Quality

Trainer

Subject matter expert and/or specialist

Evaluation modalities

Feedback form and self-assessment provided at the end of training

Pedagogical evaluation through exercises and questionnaires

Format and/or Locations

Blended Session Format - In-Person or Remote (PARIS / LYON)

In-Company/On-Site sessions upon request

Price

1 100 € / person for inter-company training

Contact us

For more information
Tel: +33 1 69 59 27 27
formation@sector-group.net

Training CY2

Duration :

2 days
(14 hours)

Advanced cybersecurity

How and why to address cybersecurity in projects, products, and company activities. Numerous techniques, technologies, and methods.

Objectives

This technical consistency module will enable you to better implement cybersecurity in your projects, products, and services. It assumes a very good understanding of the stakes, and the module will explain the techniques used in cybersecurity. Beyond the technical aspects, the module will present Cybersecurity Management aspects, through standards and based on well-known frameworks.

Program

Fundamentals
- GRC
- Risk analysis
  - Understanding oneself, knowing oneself
  - Threat sources. Characterization
  - Protection, remediation
  - The EBIOS RM method
- Continuity : PCA, PRA

Cyber lifecycle

Before, during, after
- Managing Cyber in the project
  - Secured by Design
  - DevSecOps
- Pentest
  - Logical
  - Physical
- Monitoring
  - NIST
  - SOC, CERT, SIEM

Cryptography
- Basics
  - Encryption
  - Hashing
  - Signature
- Secret
  - Secure Element
  - TPM
  - Secure Enclave
  - TrustedZone
- PKI
  - Implementation
  - Generation
- File systems
  - Bitlocker : explanation
  - Veracrypt

Side-channel attacks
- SCA : Side Channel Attack
  - DPA, SPA
  - Cache
  - Linear coding
  - Cold Boot Attack
  - Good implementations

Certifications
- CEH
- CISSP
- OSCP
- CISA
- ISO 27001
  - Lead Implementer
  - Lead Auditor

Accreditation
- What is it?
- Regulations
- Principle and implementation

Training resources

Presentations with illustrated practical case support

Prerequisites

Profile equivalent to level 6, 7 or 8 of national technical and/or scientific education

For who

Project Managers, Design Offices, Methods, R&D, Quality

Trainer

Subject matter expert and/or specialist

Evaluation modalities

Feedback form and self-assessment provided at the end of training

Pedagogical evaluation through exercises and questionnaires

Format and/or Locations

Blended Session Format - In-Person or Remote (PARIS / LYON)

In-Company/On-Site sessions upon request

Price

2 200 € / person for inter-company training

Contact us

For more information
Tel: +33 1 69 59 27 27
formation@sector-group.net

Training CY3

Duration :

1 day
(7 hours)

Automotive cybersecurity – ISO 21434

Concepts and methods

Objectives

This training will enable participants to:

- Understand the structure of the standard and its integration into the engineering lifecycle of the automotive sector,
- Know how to break down the requirements of the standard to an automotive system,
- Structure the input data necessary for conducting a TARA analysis,
- Break down the steps of a TARA analysis for practical application,
- Identify and understand the connection with UNR155 and UNR156 regulations,
- Identify and understand the connection with other interacting standards such as ISO 27001, TISAX, ISO 26262...

Program

Introduction

- List of the most well-known attacks
- Definition of an attack surface
- Connected vehicles challenge
- General structure of the standard

Connection with other standards

- Link with ISO 26262
- Link with UNR155 regulation
- Link with Automotive SPICE

Presentation of the standard and its requirements

- Definition of input data
- Explanation of the main requirements of the standard
- Templates for various deliverables

Case study

- Practical application of TARA analysis

Conclusion

Training resources

Presentations with illustrated practical case support

Prerequisites

Profile equivalent to level 6, 7 or 8 of national technical and/or scientific education

For who

Project Managers, Design Offices, Methods, R&D, Quality

Trainer

Subject matter expert and/or specialist

Evaluation modalities

Feedback form and self-assessment provided at the end of training

Pedagogical evaluation through exercises and questionnaires

Format and/or Locations

Blended Session Format - In-Person or Remote (PARIS / LYON)

In-Company/On-Site sessions upon request

Price

1 250 € / person for inter-company training

Contact us

For more information
Tel: +33 1 69 59 27 27
formation@sector-group.net

Registration form

Internship:

Title : _____

Date : _____ Location : _____

Compan:y

Company name : _____

Adress : _____

City : _____ Zip code : _____

Email : _____ Phone : _____

Training supervisor:

❑ Mr ❑ Mrs ❑ Miss Last name : _____ First name : _____

Email : _____ Phone : _____

Participant(s):

Number of participants :_____

Mrs, Miss, Mr : _____ Phone : _____

Mrs, Miss, Mr : _____ Phone : _____

Mrs, Miss, Mr : _____ Phone : _____

Fee:

Amount (excluding tax) per participant : _____€

Total amount (excluding tax) for all participants : _____€

VAT 20 %(*)

Total amount (including tax) : _____€

(*) VAT may need to be adjusted based on the applicable rate at the time of training.

❑ Enclosed is a check payable to SECTOR, corresponding to the total inclusive tax price of registration.

Name :

Company stamp
Date :
Signature :

Form to be returned to:
SECTOR
Responsable Formations
12, Avenue du Québec
BP 636 Villebon sur Yvette
91965 COURTABŒUF 1 CEDEX

Phone: +33 (0)1 69 59 27 27
Email : formation@sector-group.net

INFORMATIONS GENERALES : Conformément à la loi n° 71-575 du 16 juillet 1971 sur la formation continue, l'inscription à un stage donne lieu à convention. N° d'organisme de formation : **11 91 01625.91**
Frais de participation : Les frais de participation à un stage de formation constituent un forfait payable à l'inscription. Ils couvrent les conférences, les déjeuners et la documentation remise au participant.
Inscriptions : Les inscriptions ne sont définitives que si elles sont accompagnées de leur règlement. Le nombre de participants à un stage est limité. En cas de nécessité, SECTOR se réserve la possibilité d'annuler un stage.
Facturation-Convention : La facture envoyée tient lieu de Convention de Formation Simplifiée. L'attestation de fin de formation est envoyée à la fin de la formation avec la facture. En cas de non-participation, toute inscription qui n'aurait pas été annulée par écrit au moins une semaine avant le début de la formation sera due intégralement, mais il est toujours possible de se faire remplacer par une autre personne de l'entreprise.