EuroSPI / ASA Certified Functional Safety Engineer

Goal

In the training course the attendees get introduced to ISO 26262 based on examples from real ASIL classified projects in Automotive. You will participate actively in case studies and elaborate an ISO 26262 safety case based on your own product. The approach of „Learning by Doing" is used to elaborate a Hazard and Risk Analysis, system analysis (Functional Safety Concept, Technical safety Concept, Safety Analysis and Dependency Analysis, Diagnose Matrix, HIS – Hardware Software Interface, FIT rates, FMEDA, FTA, etc.) and to apply this in the system and software architecture. In the course attendees can select parts of their own product and apply the methods learned on their example, guided by the trainers. Only trainers with many years of safety experience in practice are used. Also we include information about legal aspects. The course is based on a joined development with leading Tier 1 companies in the Soqrates group (https://soqrates.eurospi.net) such as ZF Friedrichshafen AG, Continental Automotive AG, BOSCH Engineering, MAGNA, Elektrobit, Hella KG, etc.

Content

The course is based on a joined development with leading Tier 1 companies in the Soqrates group (https://soqrates.eurospi.de) such as ZF Friedrichshafen AG, Continental Automotive AG, BOSCH Engineering, MAGNA, Elektrobit, Hella KG, etc.

The course is based on a skills set developed ion the EU Blueprint project DRIVES which led to the foundation of the ASA (Automotive Skills Alliance). EuroSPI is a member of ASA and certifies these courses. ASA members include ACEA, CLEPA, ETREMA, and many more European automotive associations. See ASA Learning Platform (skills-framework.eu)

The course focuses on the following skills elements of that skills set

Unit U2 - Element 3: Overview of Required Engineering and V&V Methods
Unit U3 - Element 1: Implementing System Hazard Analysis and Safety Concept
Unit U3 - Element 2: Integrating Safety in System Design & Test
Unit U3 - Element 3: Integrating Safety in Hardware Design & Test
Unit U3 - Element 4: Integrating Safety in Software Design & Test
Unit U4 - Element 1: Reliability in design on product and system level

Schedule

Day 1

Time	Activity
09.00 - 10.15	U3.E1 System Hazard Analysis and Safety Concept (Continued) (H&R in different standards, in ISO 26262, examples)
10.15 - 10.30	Coffee Break
10.30 - 12.00	Exercise 1: Item Drawing and Fill out H&R (Minimum 3 Risks)
12.00 - 13.00	Lunch Break
13.00 - 14.00	Discussion of Exercise 1
14.00 – 15.00	U3.E2 Integrating Safety in System Design & Test (FSC, TSC, Safety Critical Signal Flow, HSI System level content)
15.00 - 15.15	Coffee Break
15.15 – 17.00	U3.E2 Integrating Safety in System Design & Test (FSC, TSC, Safety Critical Signal Flow, HSI System level content)

Day 2

Time	Activity
08.00 – 10.00	Exercise 2: FSC/TSC Exercise based on safety goals plus preliminary architecture decisions (based on exercise 1 outcomes)
10.00 - 10.15	Coffee Break
10.15 – 11.30	Discussion of Exercise 2

14.30 - 14.45	Coffee Break
14.45 - 16.00	U3.E4 Integrating Safety in Software Design & Test (HSI continued SW level, SW FMEA, Diagnose Matrix, SW safety Archi tecture with E-Gas, Diagnostic Coverage)

Day 3

Time	Activity
08.00 - 09.30	U3.E4 Integrating Safety in Software Design & Test Continued
09.30 - 10.00	Exercise 4: Elaborating Diagnose matrix based on signal inputs (for the signals in the HSI)
10.00 - 10.15	Coffee Break
10.15 - 11.30	Exercise 4: Elaborating Diagnose matrix based on signal inputs (for the signals in the HSI)
11.30 - 12.30	Discussion of Exercise 4
12.30 - 13.30	Lunch Break
13.30 – 15.00	U3.E3 Integrating Safety in Hardware Design & Test (Fit rate Calculation Example, FMEDA, Diagnostic Coverage, FTA)
15.00 - 15.15	Coffee Break
15.15 – 16.00	Exercise 5: FMEDA, FTA

Training Materials

The training materials include slides, templates for Functional Safety Concept, Technical Safety Concept, Safety Analysis and Dependency Analysis, Diagnose Matrix, HIS – Hardware Software Interface, FIT rates, FMEDA, FTA, etc.

Also tools for FIT rate calculation and methods to calculate an FNEDA are provided. A pool of best practice and state of the art publications from the working group SOQRATES are provided. Additionally the training is supported by an online teaching environment set up ion the online EuroSPI academy platform.

Target Group and Prerequisites

The following job roles are part of the target group: Safety Manager, Quality Manager, System- and SW Architects, project leaders, experienced engineers who are confronted with functional safety design. Safety decisions and design require a background in hardware/electronics and/or software engineering. Also experience with mechatronics is helpful. Usually attendees require some minimum 5 years work experience in automotive software or hardware to easily manage the course exercises.

Cancellation

Cancellation is not possible. You may determine a substitute or attend the course at a later date.

Examination and Certification

Exams are organised by the EuroSPI / ASA certification organisation. In case of safety engineers the exam is based on a set of mandatory exercises to be performed in the course under the observation of the trainers. The EuroSPI / ASA system allows to register with a job role, upload the exercises and have an assessor in the system assessing the student performance in the practical exercises. The EuroSPI / ASA system generates a unique certification ID and certificate for the attendee. Every 2 years the certificate will later need to be renewed by attending a short update training of 1 day to learn about the new state of the art developments in functional safety.

The EuroSPI Academy

The training is held in the EuroSPI academy in cooperation with ISCN. The company ISCN is a certified training partner of VDA-QMC and Intacs® for Automotive SPICE (https://www.iscn.com/ressources/PDFs/ISO330xx-intacs-cert-iscn.pdf, https://www.intacs.info/training-center).
The EuroSPI Academy (https://academy.eurospi.net) was founded in 2021 in cooperation with the ASA (Automotive Skills Alliance) and offers an advanced online training environment with mate-

rials, templates and exercises. EuroSPI and ISCN are full partners of the ASA (https://automotives-kills-alliance.eu/#partners). In cooperation with ASA WG 3.6 (IT in Automotive) and the EU project FLAMENCO this training platform will be further developed in the next years.

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