

Functional safety case management according to current CENELEC standards

14

Seminar-No. 01.01



Online-Seminar*

DATES & COSTS

22.-23.03.2023

Nuremberg

18.-19.10.2023

Nuremberg

On-demand

Valenciennes

Length:

2 Days

Fee:

1.400,00 €

incl. lunch and certificate of participation
plus VAT

* On-demand

TARGET GROUP

- Safety Manager
- Safety authorities staff
- NoBo, DeBo, AsBo
- Technical Project Manager
- Safety Case, Development,
Quality Assurance Staff

LANGUAGES



DESCRIPTION

The seminar provides information on the procedure for successful RAM management during all stages of design, taking into account the CENELEC standards relevant to rail transport (EN 5012x). Based on the numerous requirements expressed by the customers, the applicable laws and directives, the regulatory requirements of the safety authorities, the standards, operator guidelines, leaflets and working groups (e.g. safety guideline vehicle SIRF), an efficient application of the EN 5012X series of standards as a basis for safety verification will be demonstrated.

A selection of methods from the CENELEC series of standards used in practice is presented, with the emphasis on safety case management. The process of the preparation for risk analysis, the assignment of safety requirement levels, the qualitative and quantitative fault tree analysis (FTA), as well as the qualitative and quantitative failure mode and effects analysis (FMEA or FMECA) are covered in this seminar.

SEMINAR CONTENTS

DAY 1 09.30-17.00

- Introduction, legal fundamentals
- RAMS management (system life cycle, safety manager, SIRF)
- Risk analysis and safety targets
(Preparatory risk analysis to identify hazards and safety objectives)
- SiRF, CSM and EN 50126 correlations
- Qualitative and quantitative FME(C)A at rolling stock level
- Return of experience and discussion

DAY 2 09.00-17.00

- Qualitative and quantitative FTA at rolling stock level
- Safety verification for subsystems, components and hardware according to EN 50129, EN 61508, EN 13849 and SIRF
- Software and assessment, development, validation, expert opinions according to the new EN 50128:2011 / EN 50657:2017
- Functional safety assessment or OQA safety report
- Final discussion