

# Fundamentals of control and command and safety technology (LST) for railway systems

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## Seminar-No. 03.03



Online-Seminar\*

### DATES & COSTS

13.-14.06.2022

Nuremberg

13.-14.09.2022

Nuremberg

Length:

2 Days

**Fee:**

**1.400,00 €**

incl. lunch and certificate of participation  
plus VAT

\* On-demand

### TARGET GROUP

- RU and EIU staff
- Future operating officers within the meaning of § 47 EBO (Germany)
- Technical Project Manager

### LANGUAGES



### DESCRIPTION

The main task of today's rail infrastructure and operations operators is the safe, on-time and economical performance of train and shunting operations and the related responsibility to carry passengers and goods.

To achieve this goal, it is primarily necessary to ensure safe and at the same time efficient train operations. In addition to providing an understanding of the basic correlations in rail operations, the focus is on system knowledge of train control systems and their basic functionality.

In this context, an overview of knowledge will be presented to the attendees and the latest developments and trends will be discussed.

### SEMINAR CONTENTS

#### DAY 1 09.30-17.00

- Introduction to railway operation
  - Legal basis
  - System characteristics
  - Railway systems
  - Interaction of the involved actors
- Securing the train sequence
  - Historical outline
  - Route protection
  - Basic features of signalling
  - Distance protection for trains on the open track
  - Danger point and danger point distance
  - Signal dependence
  - Track vacancy message
- Round of discussions and conclusion

#### DAY 2 09.00-17.00

- Train control systems
  - Types, tasks and functions
  - Functionality PZB 90
  - Basic features ERTMS
  - ETCS: Function, components and outlook
- Round of discussions and conclusion