

# TIA – Seminars

## The road to an automated machine.

A guide for manufacturers and operators.

### Module 1: Fundamentals of the TIA Portal

#### Module description:

This training module will provide you with the basics of how to commission machines using TIA Portal. Throughout the module, we'll provide you with a structured introduction to hardware project planning, project management, software modules and programming languages, as well as visualization with WinCC Advanced. It's just what you need if you're looking to commission existing source codes for a specific machine or carry out error analyses on plants that are already running.

#### Contents:

##### The development environment

- Portal and project view
- Organization and settings
- GSD and GSDML
- Automation License Manager
- Software updates
- External applications

##### Basic functions without project

- Connectivity
- Online access
- Online & diagnostics
- Program blocks and PLC data types in the online view

##### A new project and project administration

- Creating a project
- Archiving and dearchiving
- Deleting a project
- Project navigation
- The inspector window

### Hardware project planning

- Creating a new device
- Change devices
- The devices and networks portal
- The network view
- The device view
- Loading the hardware configuration
- Connecting online
- The topology view

### The Siemens CPU

- Program structure
- Cycle, process image and cycle time
- Project navigation
- Device settings
- PLCSim

### Software development - Part 1

- Areas of focus of software development
- Program blocks
- Creating blocks
- Programming languages
- Data types

### Software development - Part 2

- Help functions
- Block interfaces
- Data structures
- Structure and handling

### HMI

- What is an HMI?
- Siemens HMI
- Hardware project planning
- Project planning and user interface
- HMI variables
- Simulation scenarios
- Advanced functions

### Duration:

- 24 h

**Required:**

- Your own laptop for the session
- If you cannot bring a computer, it is possible to get a computer.
- Please contact us in advance.
- TIA Portal V18 with WinCC Advanced and PLCsim
- Recommendation:
  - Basic awareness of how hardware is used in a machine

**Trainer:**

- Frederick Keymer-Eickelkamp

**Training location:**

- At our Duisburg location
- At your location
- plus travel expenses
- Online

**Certificate of participation:**

- Digital for online training courses, paper for face-to-face training courses

**Training materials:**

- Digital

**Number of participants:**

- Max. 6 people

**Price:**

- 1.410 € per participant (plus travel expenses)