SIEMENS

Online-Training - IEC 60870-5-101/104 (IK-TC-IEC)

Short Description

In the areas of energy and transport, but especially in the water & wastewater and oil & gas sectors, plants often extend over very large areas. An optimal plant overview of the decentralized process areas is absolutely necessary. With the help of telecontrol technology, the outstations are connected via WAN to one or more central control centers and monitored and controlled in front of them.

The telecontrol protocol according to standard IEC60870-5-101/104 also offers solutions for this. With IEC60870-5-101/104, the widely distributed process stations, so-called RTUs, can also be connected safely and efficiently to one or more control centers over long distances.

Based on the SIMATIC S7 controllers and TIAP, Siemens offers solutions for IEC60870-5-101/104.

Objectives

Participants will be able to structure, parameterize and start up an IEC 60870-5 RTU based on the SIMATIC S7-PLCs S7-1200, Distributed Controller ET200SP and S7-1500.

Target Group

- Programmers
- Commissioning Engineers
- Engineering personnel
- Maintenance personnel
- Service personnel

Content

- What is IEC 60870-5?
- Introduction in IEC 60870-5 protocol-101/104 protocol
- System feature of the PLC based SIMATIC Net IEC 60870-5 RTUs
- Installation guidelines and configuring aids
- Startup of IEC devices TIM, CP (TIM1531, CP1542-SP-1 IRC, CP1243-8 IRC)
- Network examples and network configuring
- Configuration in TIA Portal:
  - basic IEC 60870-5 settings of TIM/CP (Device Configuration)
  - configuration of an IEC connection
  - time synchronization in IEC protocol
  - transferring analog values, counter values and Boolean values incl. time stamping and event-buffering
  - transferring Commands and Setpoint (incl. variations Direct Operate, Select and Operate, Feedback)
  - peer to peer communication (communication between RTUs)
  - IP/Ethernet - based communication (-104) and serial communication (-101)
- Creation/configuration of the IEC 60870-5 telecontrol program in the data point editor
- Loading and commissioning of IEC stations/RTUs with TIM/CP based on S7-1200/ET200SP or S7-1500
- Exercise for simple system configurations with Ethernet-based networks
- Exercise with RTU based on the S7-1200, as well as SIMATIC S7-1500 (or ET200SP Distributed Controller)
  - optionally also serial leased lines (or serial radio networks)
  - Exercise with cross-communication communication between the RTUs (peer to peer communication)
- Diagnostic concept and remote programming/remote diagnosis (PG routing)

Exercise

The exercise examples are carried out virtually via the Internet. The participants can access a cloud-based TIAP via web browser, configure the telecontrol stations and put them into operation.

Prerequisites

- Knowledge of the programming language STEP 7/TIA Portal as well as experience in the handling of the PG are required.

- Technical requirements:
- Internet connection
  - Data transfer rate of 16 Mbit/s
  - Up to 50 GB data volume
- Web browser with HTML5 support (Google Chrome, Mozilla Firefox, Microsoft Edge or Safari)

- Additional recommendations
  - Microsoft Teams App
  - Two monitors or one monitor and a tablet

Note

We also offer training for the German and American markets.

- SINAUT ST7 Training (IK-TC-ST7)

- DNP3 Training (IK-TC-DNP3)

Type

Online-Training

Duration

2 days

Language

de