

DNP3

OEM: Siemens • Code: IC-TC-DNP3

COURSE DESCRIPTION

This training was conducted until March 05, 2026 under the course number IK-TC-DNP3. 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 DNP3 standard (IEEE1815) also offers solutions for this. With DNP3, 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 DNP3.

AUDIENCE PROFILE

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

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 European markets.
- SINAUT ST7 Training (IK-TC-ST7)
- IEC 60870-5-101/104 Training (IK-TC-IEC)

By the end of this course, participants will be able to:

- Participants will be able to structure, parameterize and start up the SINAUT ST7 telecontrol system.

Module 1: Content

- What is DNP3 (IEEE1815)?
- Introduction in DNP3 protocol
- System feature of the PLC based SIMATIC Net DNP3 RTUs
- Installation guidelines and configuring aids
- Startup of DNP3 devices TIM, CP (TIM1531, CP1542-SP-1 IRC, CP1243-8 IRC)
- Network examples and network configuring

Configuration in TIA Portal

- basic DNP3 settings of TIM/CP (Device Configuration)
- configuration of an DNP3 connection
- time synchronization in DNP3 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 and serial communication
- Creation/configuration of the DNP3 telecontrol program in the data point editor
- Loading and commissioning of DNP3 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.