




IEC 61850 LAN Design and Testing

 2 days

 English

 Cpuc04en

Ethernet is considered a fast, reliable, and scalable local area (LAN) technology that is becoming the predominant LAN technology within electrical substations. Through a combination of lectures and instructor demonstration lab exercises, this course presents the fundamentals of Ethernet to allow students to understand and correctly apply this LAN technology within the digital substation.

Objectives

- ▶ Understand the requirements of an IEC61850 OT Ethernet LAN
- ▶ Understand the fundamentals of ethernet LAN operation
- ▶ Understand the fundamentals of the design, configuring, and testing of an ethernet LAN to verify the LAN meets the requirements of digital substation applications.

Content

- ▶ Modern ethernet media
- ▶ Hub and switch operation
- ▶ Key features of managed switch web-based Interfaces
- ▶ The ethernet frame
- ▶ Switch learning
- ▶ Network redundancy (RSTP, PRP, HSR)
- ▶ MMS, GOOSE, and SV filtering using VLANs
- ▶ Data flows or “Virtual Wiring” and switch logic
- ▶ Introduction to PTP
- ▶ Introduction to testing sampled values relays with an OMICRON CMC test set
- ▶ Instructor Demonstration Lab exercises

Solutions

DANEO 400
IEDScout
StationScout
Quick CMC
CMC GOOSE module
CMC IEC61850 Client/Server module

Audience

Technical staff from electric utilities or companies involved in project planning, commissioning, or maintenance of IEC 61850 systems.

Prerequisites

Basic knowledge of electrical engineering