Wavewin Training Course (Outline & Agenda)

Fault and Disturbance Recording Fundamentals and Data Acquisition
Wavewin 103
Instructor: Amir Makki

Prepared By

Softstuf, Inc.
Software Structures for Unlimited Functionality

P. O. Box 40245; Philadelphia, PA 19106
800.818.3463
www.softstuf.com

Training on Recording and Data Acquisition with Wavewin

(One Day Class)

The main objective of the training class is to provide an understanding of digital recording fundamentals and how to use Wavewin for data acquisition. The course is worth 8 professional development hours. Certificates will be provided to interested students upon request.

Summary:

Students will learn how to use data acquisition systems (Sniffers) to capture transient currents, voltages, targets and other system parameters under fault and disturbance conditions as well as during normal switching, testing, and maintenance operations. Students will also learn how to correct problems with captured data and avoid traps in analysis.

A number of real life applications (case studies) will be presented including dynamic relay testing and monitoring of substation equipment such as EM relays, circuit breakers, instrument transformers, and capacitor banks. The analysis features will focus on harmonic studies for recognition of fault signatures such as CT saturation, inrush, and cap bank ringing.

The highlighted features will cover operational and maintenance issues such as installing hardware and software, configuring and calibrating sensors, setting instantaneous and RMS triggers, recording in continuous or trigger modes, managing captured data, and using IEEE Standards COMTRADE and COMNAME. Compliance with NERC PRC 002/005 requirements will also be addressed. The data acquisition class is composed of 5 sessions:

Session 1: Installing and configuring Sniffer components (recorder, sensors, setup)
Session 2: Scaling and offsetting sensor outputs (default settings and user calibration)
Session 3: Setting instantaneous and RMS triggers (capturing DC targets and AC transients)
Session 4: Related NERC and IEEE Standards (PRC 002/005, COMTRADE, and COMNAME)
Session 5: Analysis and harmonics (measurements, calculations, and signature recognition)

Class Agenda:

08:00 - 08:30 Setup
08:30 - 09:30 Session-1 (installation and configuration)
09:30 - 10:30 Session-2 (settings and calibration)
10:30 - 10:45 Break
10:45 - 12:00 Session-3 (triggering, capturing DC targets and AC transients)
12:00 - 01:00 Lunch
01:00 - 02:00 Session-4 (related NERC and IEEE requirements)
02:00 - 03:00 Session-5 (harmonic analysis and signature recognition)
03:00 - 03:15 Adjourn