Introductory course:
Time Domain Simulation

DAY 1

MODULE 1: Time Domain Simulation

Presentation: Time Domain Simulations in *PowerFactory* — $^3/_4$ **h**

Calculation methods: balanced/unbalanced RMS simulation, EMT simulation. Handling of the time domain simulation. Visualisation of simulation results. Exporting simulation results (*.csv, *COMTRADE format, etc.).

MODULE 2: Time Domain Simulation - RMS

Exercise: RMS Simulation — $^3/_4$ **h**

Running RMS simulations in a test network. Calculation of initial conditions, definition of result variables and simulation events. Graphical visualisation of results.

Coffee break

Exercise: RMS Simulation (cont.) — $^1/_2$ **h**

MODULE 3: Time Domain Simulation - Simulation Scan

Exercise: Simulation scan — **1 h**

Execute a simulation with different simulation scan modules and configurations: fault-ride through, loss of synchronism, voltage scan, variable scan module.

Q&A session

Lunch break

MODULE 4: Time Domain Simulation - EMT

Exercise: EMT Simulation — **1 h**

Running EMT simulations in a test network. Calculation of initial conditions, definition of result variables and simulation events. Graphical visualisation of results.

MODULE 5: Frequency Analysis of Results

Exercise: Fast Fourier Transform (FFT) — $^1/_2$ **h**

Getting the harmonic content. FFT configuration options.

Coffee break

MODULE 6: Definition of Dynamic Models in *PowerFactory*

Presentation: Dynamic Models in *PowerFactory* ${}^1\!/_2$ **h**

System modelling in *PowerFactory*: the general approach. The composite plant model and the controller models (DSL elements). Use of templates from the global library (e.g. for non-conventional generation).

Exercise: Add a dynamic model from the global templates library **1 h**

Handling. How to add a dynamic model from the global templates library and how to configure/changes its parameters.

Q&A session

Time Schedule (Central European Time)

	Time
First 90 minutes block	9:00
Coffee break	10:30
Second 90 minutes block	10:45
Q&A session	12:15
Lunch break	12:30
Third 90 minutes block	13:30
Coffee break	15:00
Fourth 90 minutes block	15:15
Q&A session	16:45
End of the training day	17:00