

Title of the Keynote:

IEC61850 and Cyber-Physical Security of Power Systems

Abstract:

The power system of the future is expected to host lots of distributed and renewable generation, smart EV charging, energy-aware IoT, dynamic markets, and many more applications and technologies. These fundamental changes go along with the digital transformation of the power grid. SCADA, digital substations, IEC61850, sensors, and actuators are deployed in order to make the grid more observable and controllable. The digital "operational technology", or OT, enables the required flexibility, but also imports a new phenomenon: cyber-threats. The combination of the physical renewable power system and its stability issues with the digital system and its security issues leads to a cyber-physical system that deserves special attention. This presentation will introduce the audience into digital power systems and demonstrate that weakly protected digital substations are an easy target and that deliberate attacks can lead to catastrophic consequences.

Professor Peter Palensky