



Design Analyze Optimize

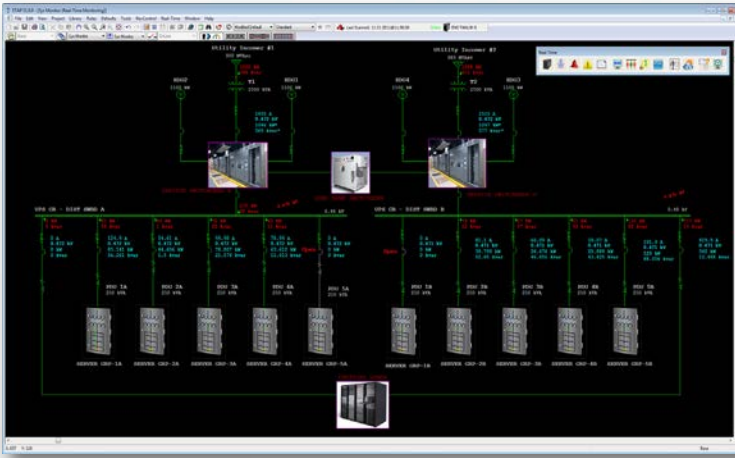
ETAP is utilized in mission critical facilities as an integrated electrical power system design and power management system. ETAP tracks, manages and improves power usage effectiveness while maintaining maximum availability of vital operations.

- Electrical Data Center Distribution System Design
- Intelligent One-Line Diagram & Virtual Modeling
- Real-Time Power Analysis & Reporting
- “What If” Analysis with Real-Time & Archived Data
- Real-Time Power Flows & Short Circuit
- Electrical Capacity Evaluation & Planning
- Real-Time Protective Device Sequence of Operation Evaluation
- Critical Infrastructure Failure Mode & Effects Analysis
- Real-Time System Reliability Assessment
- Real-Time Arc Flash Hazard Evaluation
- Switching Sequence & Work Order Management
- Power System Monitoring & Control
- Dedicated Data Center HMI & Thin Client Dashboards
- Redundant Fault Tolerant Software Architecture

Smart Data Centers

Integrated Design Tool & Power Management System

ETAP offers a suite of fully integrated electrical engineering software solutions that integrates a graphical user-friendly power system design & modeling platform with advanced suite of real-time power applications. ETAP Real-Time power applications are modular and include intelligent power monitoring, real-time predictive simulation, energy management, and system optimization combined with advanced automation tools.



*Delivering Real-Time
Predictive Simulation &
Decision Solutions for
Mission Critical Data Centers*

Simulation Modules

- Load Flow
- Short-Circuit
- Device Coordination & Selectivity
- Sequence-of-Operation
- Arc Flash
- Power Quality & Harmonics
- Underground Cable Thermal Analysis
- Motor Acceleration
- Transient Stability
- Reliability Assessment
- Failure Mode & Effects Analysis
- Switching Management
- Contingency Analysis

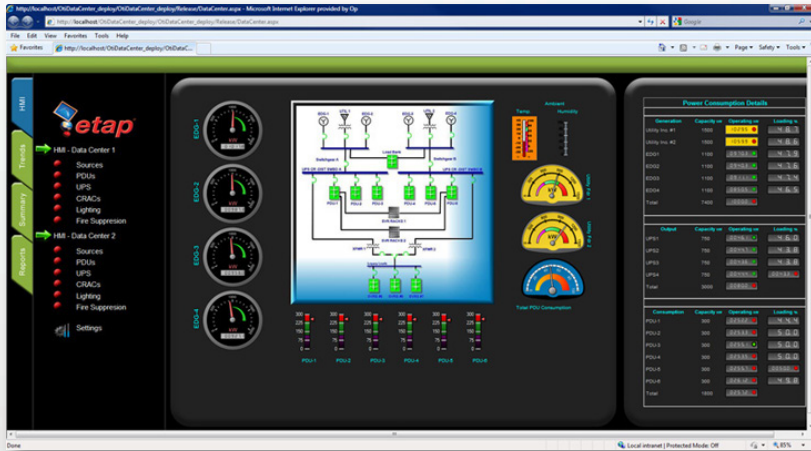
Features

- Full spectrum AC & DC analysis
- Emulate response of protective devices
- Evaluate protection & control actions
- Get online data on-demand
- Retrieve archived data for system analysis
- One-touch simulation
- View & analyze initial & post-disturbance actions
- Intelligent interactive graphical user interface
- Online simulation alerts
- Automatic scenario simulation using Project Wizard
- Intelligent one-line diagrams
- Multi-dimensional database
- Integrated alarm, warning, & acknowledgement
- Client-server configuration
- Built-in redundancy & automatic failover
- Thin client dashboards



Advanced Monitoring with State Estimation

Advanced Monitoring provides intuitive, intelligent, and integrated real-time monitoring via a state-of-the-art interface. ETAP's open architecture structure allows seamless integration with metering devices, data acquisition, and archiving systems, which is an essential capability for power management system.



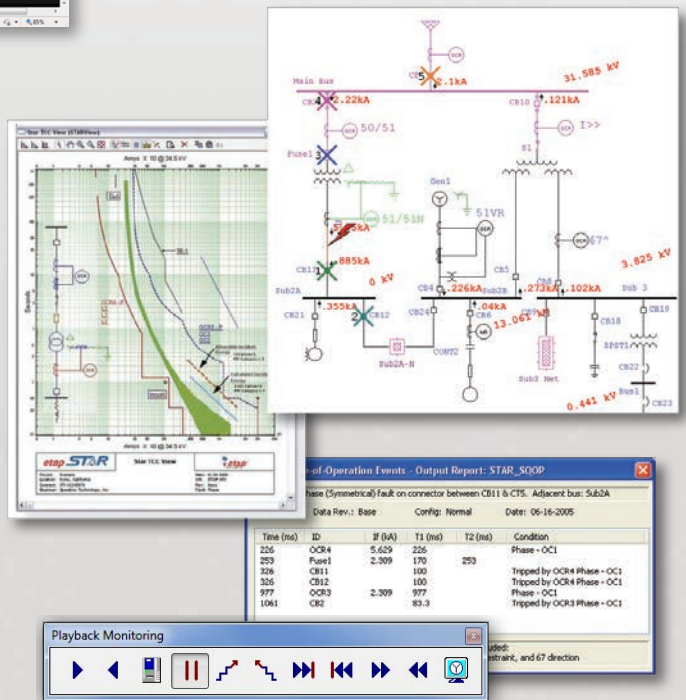
Thin Client Dashboards allow visualization of analysis & operational data

Predictive Simulation

Predictive Simulation is a powerful set of analytical modules that allows the prediction of system behavior in response to operator actions and events using real-time and archived data.

Event Playback

Event Playback is especially useful for root cause and effect investigations, improvement of system operations, exploration of alternative actions, and replay of "What If" scenarios. ETAP can be configured to provide a complete picture of the electrical system from the stored data. This includes playback of previously recorded monitored data, calculated system parameters, sequence of events, and message log.



Operator Training Simulator

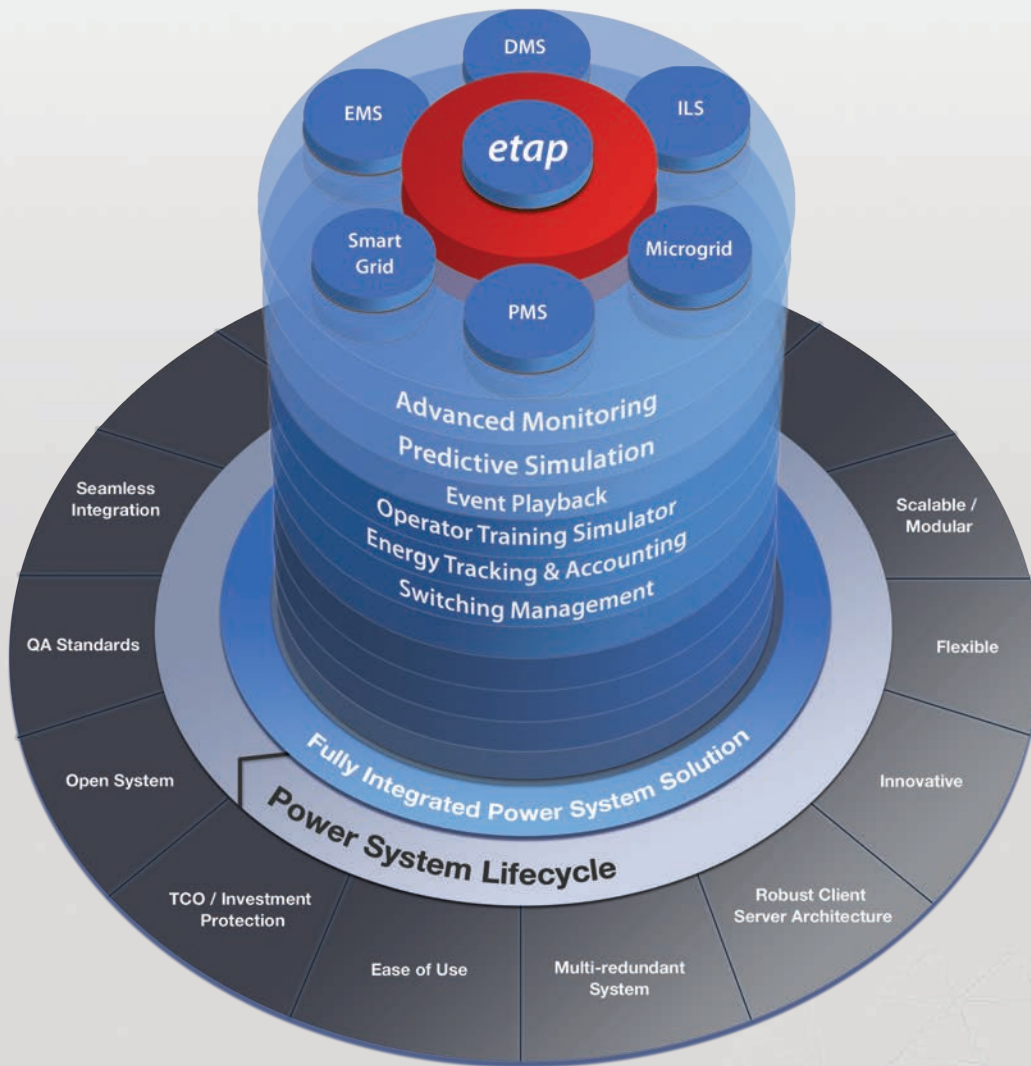
Operator Training Simulator is a set of analytical modules that allows prediction of system behavior in response to operator actions using configurable scenarios. Compared to traditional training methods, operator training is accelerated using dynamic graphical simulation of the power system. This makes training an ongoing process.

Switching Management

Switching Management allows the dispatcher to build, simulate, and verify a complete switching program using a fully graphical user interface and execute the approved switching programs in one step while maintaining compliance with safety and security procedures.

Energy Tracking & Accounting

Energy usage and cost analysis features provide energy consumption critical loads, UPS connected loads, Power Distribution Panels, Power Distribution Units (PDUs), based on zones as well as total energy consumption. Energy reporting can be augmented with data center performance metrics such as DCiE, and PUE for the entire system. ETAP can also track energy related costs based on user-definable cost functions and tariffs especially for co-located or co-hosted data centers.



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B4-DC-1111-1