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Sustainability through Continuous Intelligence



POWERING THE DIGITAL ENERGY LANDSCAPE

ETAP 22 offers a multitude of newly integrated power analysis modules, electrical design capabilities, automation, and operations solutions. ETAP 22 addresses user requirements and industry needs wit advanced renewable energy modeling, safety compliance, simulation tools, and leading edge, model-driven, real-time network management solutions.

Upgrade to ETAP 22 for an improved user experience with 1,000s of enhancements, time-saving

Arc Flash

ArcFault based on IEC 60909-2016

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- Arc Flash Decay
- Single Phase Arc Flash

AC & DC Arc Flash

- Schau. H; Halinka. A
- DGUV-I203-077 (Worst-case)

DC Arc Flash

- Generation categories
- Single-diode/two-diode I-V, PV systems

Arc Flash Auto™

- · Single pole effect on 3-phase fault transforming to a LL fault
- Global Rulebook option to automatically skip nodes
- Arc Flash Calculators
- DC Arc Flash
- •

UNBALANCED NETWORK SHORT CIRCUIT ANALYSIS

- Unbalanced Network Short Circuit Analysis International Standards:
- IEEE Standard C37 Series
- IEC Standard IEC-60909, IEC-61660 & IEC/IEEE 62271-37-013
- GOST Standard GOST R 52735 & GOST 28249

System Modeling

- Phase domain representation of 3-phase & 1-phase systems
- Modeling of unsymmetrical 3-phase lines & cables, etc.
- Modeling of coupled 3-phase and 1-phase lines
- Modeling of special distribution transformers (open-delta, Scott-T & booster XFMRs, etc.)
- Unif ed AC & DC systems combined with rectif ers/converters
- Analysis of a fault in DC system automatically includes effect of AC system components and vice versa

Short Circuit Simulation for Shunt Fault Types

- Fault types 3Ph, 3PhG, LG, LL, LLG
- Fault phases ABC, ABCG, AG, BG, CG, AB, BC, CA, ABG, BCG, CAG
- Simultaneous shunt faults of different fault types & phases at different locations

Short Circuit Simulation on GIS System

- Fault calculations on user-specified shared dutues
- Fault calculations along user-specified feeders
- Feeder fault calculation on all junction points or multi-connection junction points
- Device evaluation for protective devices in GIS systems, including those specified in edge editors

AC & DC Device Duty Evaluation

Protection, Coordination & Selectivity

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- Automated coordination evaluation beyond minimum time
- User-defined fields for protective devices
- Template editor per equipment type with import & export capability
- Data Manager with editing capability including data revisions
- Report Manager with preview & comparison of UDF values, and creation of Excel report
- Star Sequence of Operation Slider
- Ignore Maintenance Switch in Sequence of Operation
- Star View TCC
- Motor line & terminal acceleration curve
- Minimum time area
- Visible/invisible curves from right-click menu
- Find minimum time difference in normalized view
- Visibility and display enhancements

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Distance Protection

- Simulate protection impact based on Unbalanced Faults AG, BG, CG, AB, BC, CA, ABG, BCG, and CAG
- Single phase distance relay integration with eTraX[™] for railway system protection simulation
- Create and manage Star Views / TCCs in StarZ mode
- Normalized TCC based on StarZ single-fault report
- Enhanced library with user-def ned comparators & digital source stencil
- Vendor specific transformer/bus/line differential relay

POWER SYSTEM OPTIMIZATION

Switching Sequence Management (SSM)

- Validation of switch plans using Unbalanced Power Flow
- Simulate switch plans on One-Line or GIS diagram
- Export sequence plans to Excel
- Export plans to online Sequence Management Viewer

Switching Optimization

- · Alert & visual display on One-Line & GIS diagram
- Enhanced modeling for switched capacitor banks
- Enhanced feeder balancing & optimize voltage objectives
- New Phase Load Balancing objective

Volt/Var Optimization

- Alert visualization on GIS diagram
- Enhanced modeling for switched capacitor banks & distribution transformers

Fault Management & Service Restoration

- Improved minimize overloading & optimize voltage objectives
- Voltage vs. distance plot for each phase

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ETAP RESTful API for Interoperability

- Connect to ETAP from any device or platform
- ETAP services over REST API
- Secure connection (https) to DataHub™
- Readily implemented as a Python client in etapPy
- Run scenarios & studies
- Retrive project data from connected software applications

Scripting & Study Automation using Python™

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- Integration of ETAP and Python scripting language
- Run ETAP studies remotely and in parallel across machines