etap **14 1**

Redesigned to Deliver Unmatched Speed, Intelligence & Reliability
Boost Production by 50%

ETAP 14 Major Features

- 64-bit architecture and local SQL database
- Auto-Build
- Datablock & Theme Manager
- Star, Auto-Evaluation - Automated evaluation for protection & coordination
- Short Circuit Analyzer

- Contingency Analysis
- Updated Arc Flash Standards including NFPA 2015
- EMTP Interface with EMTP-RV and PSCAD
- Updated SmartPlant Electrical Interface
- AVEVA Electrical Interface
- Over 1000 Protective Device models

ETAP 14.1 Release Updates

This upgrade release to ETAP 14 series includes important enhancements based on the industry's latest demands such as multi-language output reports and arc flash labels.

New Features & Enhancements

- New Protective Device Settings Reports in
  - » Excel Format
  - » Crystal Reports
- Enhanced Arc Flash Analyzer
- Enhanced Short Circuit Analyzer
- Thermal Withstand Duty Evaluation for IEC Standard
- Amendment to British Standard Cable Sizing BS 7671: 2008-A3
- Updated IEC 60364-5-52 LV Cable Sizing standard
- Updated Library Data
- Enhanced U/G Raceway Systems Alignment Tools
- Enhanced Harmonics Alert View
- Revised Protective Device Library Models
- License Manager Installation Enhancements
- Enhanced Conversion from SKM® and EasyPower® to ETAP

Auto-Evaluation of Protection & Coordination

Reduce Man-Hours
Month to Minutes

ETAP Real-Time

- Multistate element colors & symbols
- General Measurements Alarming
- Enhanced Quick Navigation & Toolbar Layout
- Transformer Tap Control
- IEC 61850 - Support up to 125 devices per data collection concentrator
- CSV Driver Communications
- Electrical & Non-Electrical Control Commands
- Real-Time Continuity Coloring
- ILS - Load Shedding Sequence-of-Events Recording

Customizable Reports

- ETAP SCADA & Web Report Viewer
- Automatic Report Scheduler
- Custom Report Designer
- Real-Time & Historical Data Access

AGC Enhancements

- Generator Maintenance Warning & Alarms
- Fuel Level Monitoring
- Forbidden Operational Areas

ETAP 14.1 Release

ETAP 14.1 Model-Driven Power System Design & Operation Software offers powerful new capabilities and productivity features to accelerate system modeling, ensure design integrity, and deliver intelligent predictive analysis.
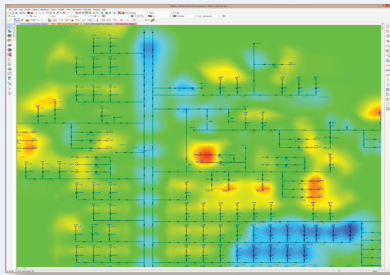
Graphics & Database

ETAP Foundation *New*
- 64-bit architecture
- Local SQL database
- System Manager & docking

One-Line Diagram
- High-resolution graphics *New*
- Alignment tools
- Right-click menu
- Graphical symbol selection *New*
- Graphical contouring based on results *New*
- Display options
- Circuit Tracing *New*

Auto-Build *New*
- Rule-Based creation of one-line
- Automatic spacing & alignment rules
- Automated voltage assignment
- Spacing & voltage rule book

Datablock *New*
- Customize input data & study results
- Display results, input, and/or tags
- User-friendly options to display
- User-defined templates
- Share deliverables across organization

Theme Manager *New*
- User-defined result format
- Display / hide based on
  - Zoom level
  - Equipment type
  - Equipment state
  - Info annotations
  - Study results
  - Datablocks

Composite Network *New*
- Image presentation
  - Symbol
  - Pictures
  - Internal one-line
- Unlimited connections
- Customizable size

Libraries
- 1000+ protective device models *New*
- Quickpick tabular views *New*
- Induction Machine Circuit Model *New*
- Multi-Function Relay
- Low Voltage Solid State Trip, LVSST

Relay
- Current & voltage input
- Device parameters
- Base current (Ibase) *New*
- Output interlocks
- OCR & OLR functions

License Manager
- Network license checkout
- Virtual machine support
- Keyless network licensing *New*

Data Exchange

SmartPlant® Electrical Interface
- Bi-directional data exchange
- Map attributes of SPEL with ETAP elements & properties using Universal Mapping

AVEVA Electrical™ Interface *New*
- Bi-directional data exchange
- Map attributes of AVEVA Electrical with ETAP elements & properties using Universal Mapping

Import from Legacy Software
- Built-in conversion tools
- Automatically generate multi-layered one-line diagram
- Import electrical data & protective devices
- SKM PowerTools®
- ESA EasyPower®
- PSS/E®

Analysis Modules

Load Flow
- Load Flow Analyzer
- Adjustments based on negative tolerance *New*
- Identify & alert modeling issues *New*

Short Circuit Result Analyzer *New*
- View results of multiple studies in one glance
- Compare & analyze study results
- Determine worst-case duty violations
- Easily identify over duty devices

Arc Flash
- NFPA 70E 2015 *New*
- Result Analyzer
- Sequence-of-operation for IEC Arc Flash *New*
- Main & load protective device enclosure isolation
- Conductor orientation correction factors *New*

DC Arc Flash
- Iterative method solution for Solar Systems *New*
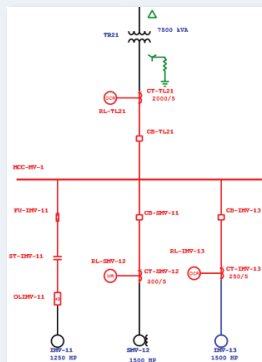
Star - Protection & Coordination
- AC Device Setting reports
- DC Device Setting reports *New*
- Panel Device Settings report *New*
- DC short-circuit
- Generator Excitation point
- Generator Stator Damage Curve
- Transformer Damage Curve
- Motor Damage Curve

Star Auto-Evaluation: Protection & Coordination *New*
- Automated evaluation of zones for overcurrent protection & coordination
- Reference Rule Book for evaluation
- Automated display of TCC curves & equipment damage curves
- Automatic selection of worst case fault location
- Tabular & graphical presentation of evaluation results
- Interactive result viewer
- Summary of protection & coordination evaluation results
- Study result report in spreadsheet format
- Scenario and Study Wizards
- Graphical Screen Capture

Star - TCC View
- Time Difference
- Crosshair
- Screen Capture *New*
- Label auto-layout *New*
- Low-Voltage Trip Device
- Low-Voltage Circuit Breaker Override *New*

Contingency Analysis *New*
- N-1 & N-2 contingency assessment & ranking
- Fast screening method to scan outage list
- Multiple graphical outage lists
- Automatic performance indices calculation
- Summary report analyzer

Cable System
- Cable insulation voltage stress *New*
- Sheath & Armor induced voltage *New*
- Underground Thermal Analysis
- Maximum cable length based on voltage *New*

Cable Ampacity & Sizing *New*
- NF C 15-100 (French)
- IEC 60502

Motor Dynamic Parameter Tuning *New*
- Non-linear dynamic circuit models
- Include rotor core loss, Rc
- Save estimated results to library
- Match actual MFR characteristic curves

Motor Starting *New*
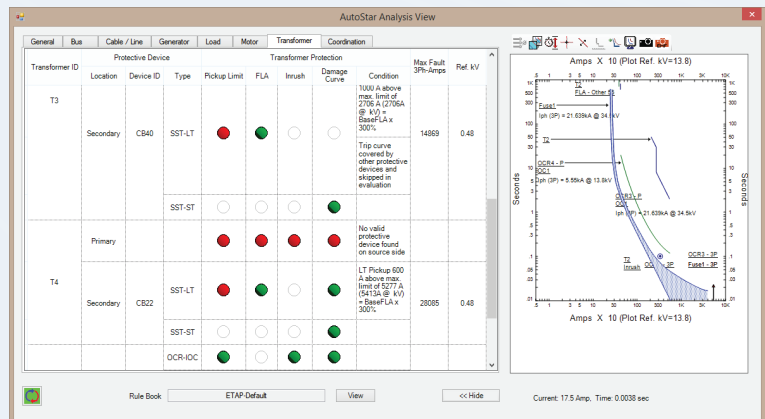- Individual bus and motor alerts
- User Definable initial bus voltages

Transient Stability
- Advanced numerical methods *New*
- Enhanced open circuit machine modeling
- More powerful automatic reference machine selection
- Load Current Compensation for more exciter models
- Improved salient pole synchronous machine modeling

EMTP Interface *New*
- EMTP-RV
- PSCAD

Extensive Messages | Tabular And Graphical Evaluation Results | Colorful Status Indication | Max Through Fault Current

Real-Time

Engineering Workstation
- Localized SCADA views & configuration
- Multistate breaker color & symbols
- Communication failure display
- Taglink alarming
- Component flashing for abnormal states
- Identify non-tagged components
- Graphical WPF Views – control, pinning & flashing
- Failed control identification
- Alarm inhibition

System Communications
- IEC 61850
  - Sequence of Event reports
  - Buffered reports
- Modbus TCP
  - Performance & data quality
  - Event based polling
- DNP3
  - Sequence of Event reports
  - Class polling 0, 1, 2, 3
- Automatic failure recovery
- Connection status monitoring
- XML based messaging

Data Captures & Notification *New*
- Sequence of events & waveform capture
  - General Electric
  - Schneider Electric
  - Schweitzer Engineering Laboratories
  - Electro Industries, Nexus
- Vaisala weather service
- Short Message Service, SMS

Unit Commitment *New*
- Real-Time validation & optimization
- Forecast based commitment
- Maintenance schedules

Web Real-Time Consoles
- Configurable GIS View
- Enhanced Trending
- Additional Component Library
- Import GIS Views
- Editable Gauge Components
- Event Display on GIS Views

SCADA Viewer
- OPC UA Client
- WPF technology
- Full WebRT features in a workstation software
- Automatically import web views & ETAP models
- WPF Designer
- Control & alarm management
- Improved simulation capabilities

Sequence of Events
- Log operator events
- Log operator logins
- Enhanced WPF views
- Automatic MongoDB replication
- Customizable display and messaging
- Linked to ETAP and SCADA Viewer
- User-defined themes

SCADA Integrator *New*
- Metering device library
- Auto configuration of communication device drivers
- Auto-generation of communications tags
- Alarm groups
- Tag state groups
- AGC enhancements

Intelligent Load Shedding
- ILS Event Analyzer

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Quality Assurance Commitment
ETAP is Verified and Validated (V&V) against field results, real system measurements, established programs, and hand calculations to ensure its technical accuracy. Each release of ETAP undergoes a complete V&V process using thousands of test cases for each and every calculation module. ETAP Quality Assurance program is specifically dedicated to meeting the requirements of:

Registered to ISO 9001:2008

ISO 9001:2008	10 CFR 50 Appendix B	10 CFR Part 21	10 CFR Part 50.55	ANSI/ASME N45.2
ASME NQA-1	CAN / CSA-Q396.1.2	ANSI / IEEE 730.1	ANSI N45.2.2	

Certification No. 10002889 QM08

B4-E14.1- 0116