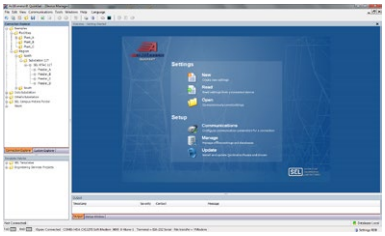
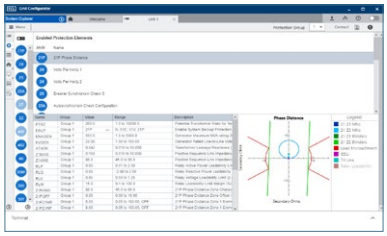
Software Overview



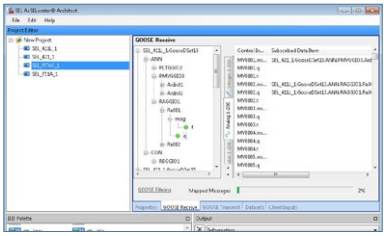
ACSELERATOR QuickSet®

QuickSet is a tool to quickly and easily configure, commission, and manage devices for power system protection, control, metering, and monitoring.



SEL Grid Configurator NEW

Grid Configurator is the next evolution in SEL device configuration software, allowing you to quickly and confidently create, manage, and deploy settings.



ACSELERATOR Architect®

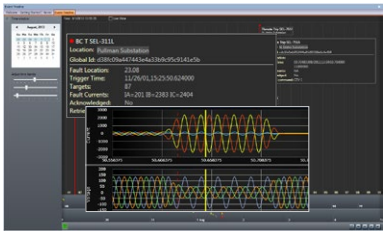
Architect streamlines the configuration and documentation of IEC 61850 messages, controls, and reports.

SEL RTAC HMI

The SEL Real-Time Automation Controller (RTAC) HMI offers an easy way to visualize data to monitor and control your system.

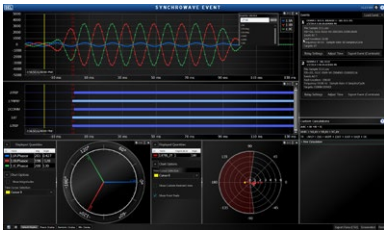
ACSELERATOR Diagram Builder™

Diagram Builder enables the creation and management of HMI visualization projects for the SEL RTACs in your system.



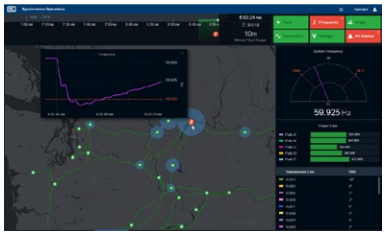
ACSELERATOR TEAM®

TEAM automates the collection of power system data from multiple devices and stores the data in a central location for easy access.



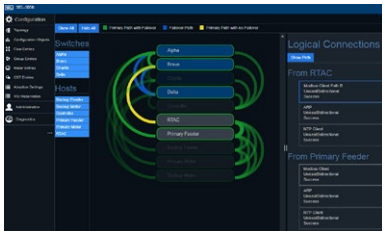
SYNCHROWAVE® Event

SYNCHROWAVE Event allows you to display and analyze SEL relay event reports and COMTRADE files.



Synchrowave Operations NEW

Synchrowave Operations improves operator situational awareness with wide-area visualization and analytics solutions for real-time power system operations.



Software-Defined Network Flow Controller

The SEL-5056 Flow Controller is the central interface for the commissioning, configuration, and monitoring of all SEL SDN-enabled Ethernet switches.

SEL-5037
Grid Configurator NEW

selinc.com/products/5037

Included With Supported Products

Grid Configurator is a freely distributed software tool for engineers and technicians to quickly create, manage, and deploy settings for SEL power system devices. It features a modern interface designed for ease of use, with powerful protection visualization and comprehensive reporting to reduce device deployment complexity.

Easy device configuration

A user-configurable device hierarchy allows you to quickly identify power system devices, such as relays, meters, and distribution controllers. The spreadsheet-style editor makes finding and editing one or many settings simple. Powerful compare and merge features allow you to manage settings across multiple devices within a single screen.

Powerful protection visualization

The Device Overview feature provides an immediate high-level summary of how you are using your devices' capabilities. You can also see a graphical configuration for many relay protection functions.

Comprehensive reporting

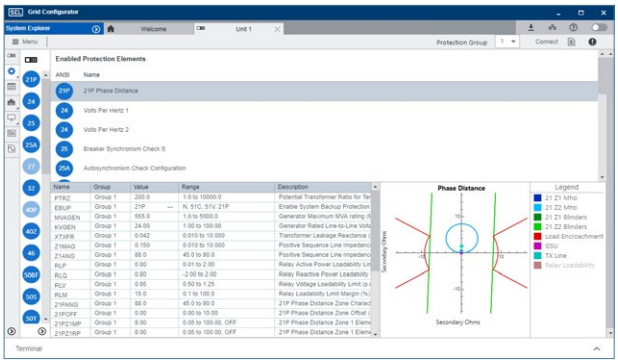
With Grid Configurator, viewing and downloading reports for an entire substation at once is simple. You can filter by date, report type, or device type and download the reports to your laptop with a click.

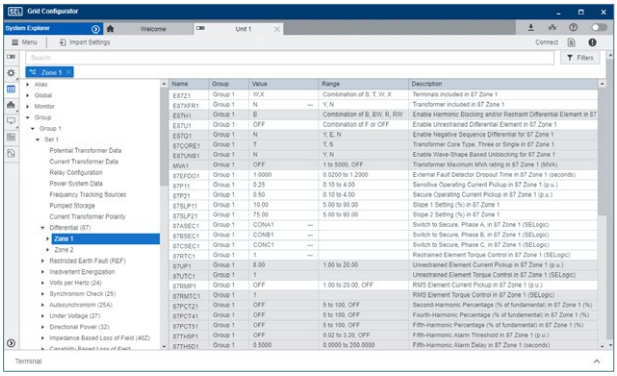
Quick settings deployment

Grid Configurator makes it simple to send settings to multiple networked devices at once—no more moving cables from device to device. It provides a report at the end of the process to let you know if there were any concerns during download.

Simple migration

Avoid data re-entry, decrease settings errors during setup, and save time by importing settings results from external calculation tools into Grid Configurator.





Work efficiently and accurately using the spreadsheet-style editor to configure a single device or a large group of devices.

For the list of supported products, visit selinc.com/5037products.

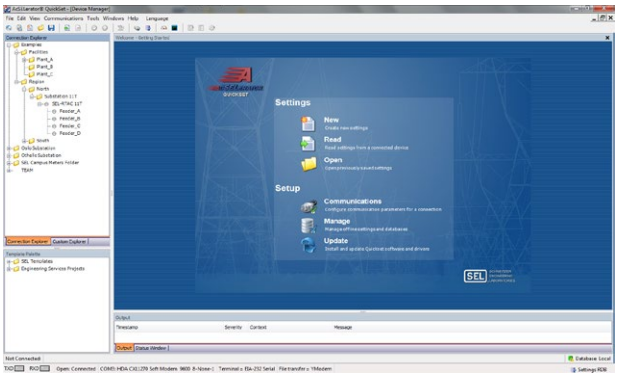
SEL-5030

ACSELERATOR QuickSet® Software

Included With Supported Products

selinc.com/products/5030

QuickSet is a tool to quickly and easily configure, commission, and manage devices for power system protection, control, metering, and monitoring.

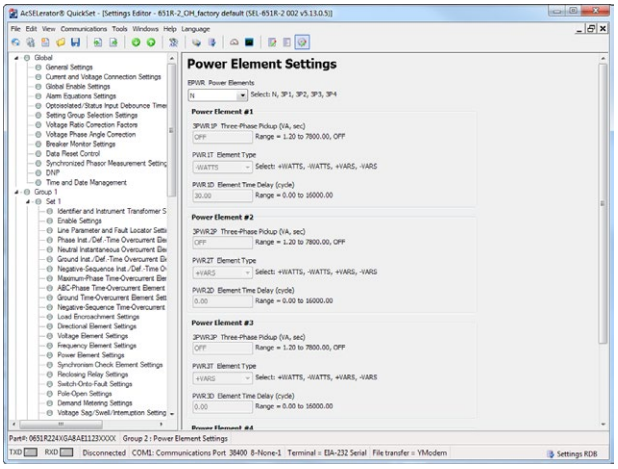


Streamlined settings creation and validation

View the logical settings groups presented by QuickSet to quickly identify related device settings. QuickSet automatically verifies these settings to ensure they are in range and permitted.

Reduced logic design time

Generate custom logic with the Graphical Logic Editor (GLE). To simplify logic configuration in supported relays, QuickSet offers drag-and-drop tools for creating diagrams and SELOGIC® control equations specific to your application.



Device performance monitoring

Use the device HMI within QuickSet to manage and monitor system values. This is ideal for ensuring proper device performance during commissioning.

Centralized device management

Organize the numerous devices and their related data in a central location with the Device Manager plugin, enabling improved collaboration.

Standardized new device deployment

Reduce human error when deploying new devices by using the Template Palette. Predefined templates that match your company's standards make it easy to configure new devices.

Improved configuration collaboration

The Device Manager reduces the time spent with device configuration management and oversight by reconciling collaborator versions using the built-in compare tool.

File version management

Control versions of settings in a centralized database. The Device Manager lets you create setting baselines, generate comparison reports between setting versions, and meet regulatory requirements.

QuickSet Ordering Options

Design templates

Create settings templates for uniform device design.

Device management for workgroups

Collaborative access to Device Manager data.

For the list of supported products, visit selinc.com/5030products.

SEL-5036

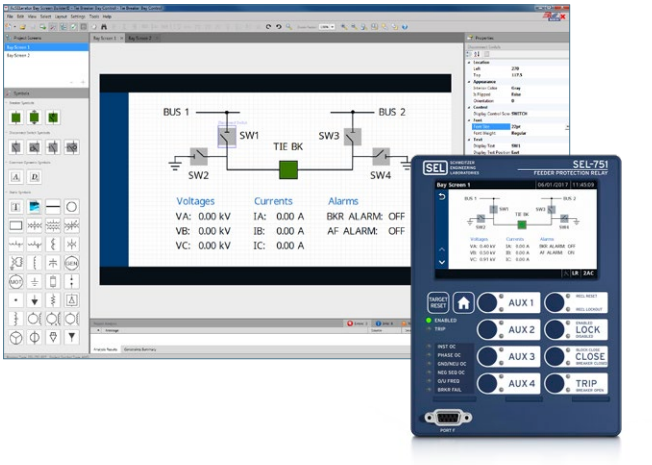
ACSELERATOR® Bay Screen Builder Software

Included With ACSELERATOR QuickSet® SEL-5030 Settings Driver for Supported Products

selinc.com/products/5030

Bay Screen Builder is a Microsoft Windows application that lets you create custom bay screens for SEL devices with touchscreen displays. It works with QuickSet, enabling you to take control of bay screen design and management.

Try a free copy of Bay Screen Builder by downloading it using SEL Compass®, available at **selinc.com/products/compass**.



Standalone, device-integrated, customized control and monitoring

Leverage the rich, easy-to-use repository of ANSI and IEC symbols in the Bay Screen Builder for a variety of bay screen designs. The software natively supports English, French, German, Italian, Portuguese, Russian, and Spanish. You can deploy bay screens anywhere using fixed images containing other languages.

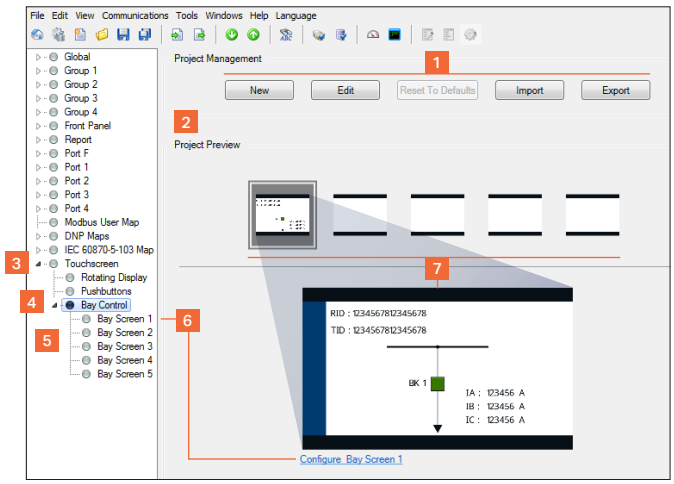
Efficient bay screen design standardization

Collaborate on and share Bay Screen Builder projects for standardization, and readily update standards by customizing existing designs.

SEL system integration via simple interface

Launch Bay Screen Builder from within QuickSet for user-friendly access to all items necessary for the bay screen design.

All bay screen editing and management tasks initiate with one button in QuickSet. The bay screens download to the target SEL devices when you send settings.



1. Save time and improve efficiency by sharing Bay Screen Builder projects containing relevant bay screens. Customize the bay screens further for your application by editing the existing ones or creating new ones.
2. Preview bay screens in the device QuickSet Settings Editor.
3. Expand to access touchscreen display and bay control items.
4. Expand to access up-to-date bay screens in the device QuickSet Settings Editor.
5. Click to access Project Management and Project Preview panes.
6. Click to access QuickSet settings for symbols located on the selected bay screen.
7. Choose a device bay screen to preview from the overview.

SEL RTAC HMI

Web-Based HMI Package for RTACs

Starting price
$1,750 USD

The SEL Real-Time Automation Controller (RTAC) supports an optional web-based HMI system that is well-suited for use in substations and for small processes. The SEL RTAC HMI offers an easy way to visualize data to monitor and control your system without special software.

Order the RTAC HMI as an option with new RTACs, or enable it via a field upgrade.

Situational awareness and control

Efficiently monitor and control substation performance and critical industrial processes. The RTAC HMI helps you detect changing system conditions, misoperations, and early warning signs so you can make informed real-time decisions as well as plan maintenance for improved system reliability.

Browser-based secure local and remote access

Access the RTAC HMI locally or remotely via a web browser interface hosted on the web server on the RTAC unit. The HMI provides secure, role-based, authenticated access for multiple users from multiple locations. The HMI runtime system is rendered using the HTML5 standard; no plugins are required on compatible browsers.

Integrated video provides visualization with SEL-3555 and SEL-3560

Resolve your need for automation processing and HMI visualization by using the integrated video and USB ports in the high-performance SEL-3555 and SEL-3560 RTACs for local display of the HMI.

Alarm notification

Alert the operators when there is a problem by using the integrated Sequence of Events (SOE) viewer and customizable alarm annunciation.

Instant feedback and advanced warning

Design trends dynamically in the HMI runtime system to display any value over time, enabling operators to be proactive and make more-informed control decisions.

SEL system integration

Monitor, control, and analyze your system more efficiently with on-demand, secure, web-based access from anywhere, anytime.

SEL-5035

ACSELERATOR Diagram Builder™ Software

Included With RTAC HMI Purchase

selinc.com/products/5035

Diagram Builder is a Microsoft Windows application that allows you to create and manage HMI visualization projects in the SEL RTAC HMI for all of the SEL Real-Time Automation Controllers (RTACs) in your system.

Try a free copy of Diagram Builder by downloading it from the product webpage or by using SEL Compass®, available at selinc.com/products/compass.

Process overview

Efficiently design process overview screens to rapidly gather information regarding the health of your processes. Diagram Builder includes predesigned graphical objects and freehand tools for easy screen development.

Substation control

Provide consistent power system control screens using the dynamic power system objects loaded in Diagram Builder.

Alarm management

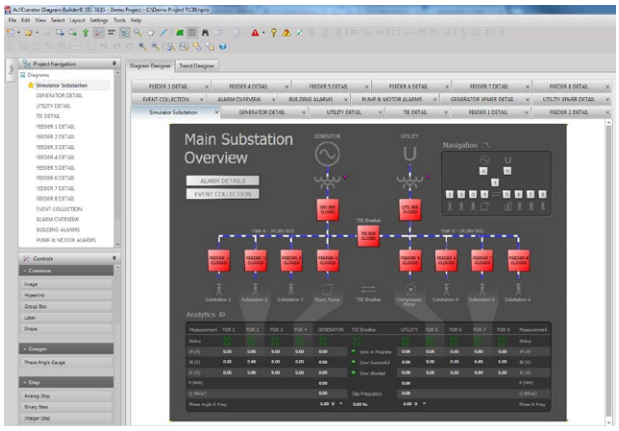
Quickly design professional-quality, customized alarm screens with alarm management objects to provide the right alarm information at the right time.

Operation improvement and troubleshooting

Use the trend designer to predefine trend displays so system engineers can more easily understand process behaviors and perform detailed root-cause analysis. Additionally, you can dynamically design trends in the HMI runtime system to display any value over time. These trends can help you avoid future system faults and failures.

Simplified tag mapping and management

Import tags from an existing RTAC project using a simple user interface to save time and effort. You can quickly find the tag you need using an intuitive tag list in Diagram Builder.

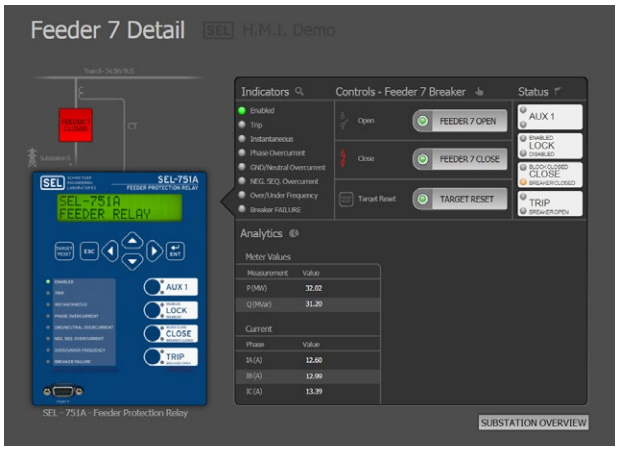


SEL system integration

Send a Diagram Builder project to an RTAC and access the HMI from anywhere with a network connection to the RTAC through a convenient web interface. The HMI runtime system is rendered using the HTML5 standard.

System diagram customization

Design every aspect of a diagram, such as the background, colors, and fonts. Layout tools help you keep it all organized.



SEL-5045

ACSELERATOR TEAM® Software

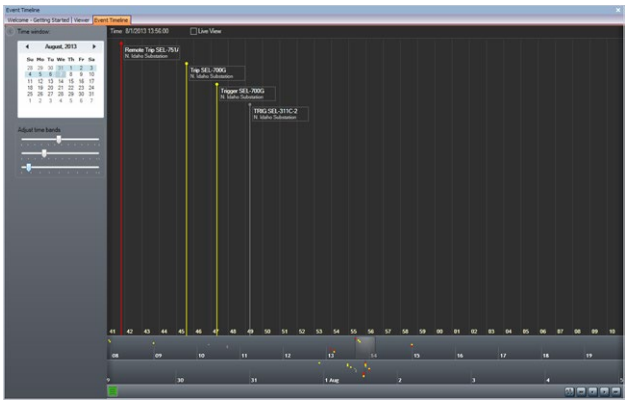
Starting price
$2,590 USD

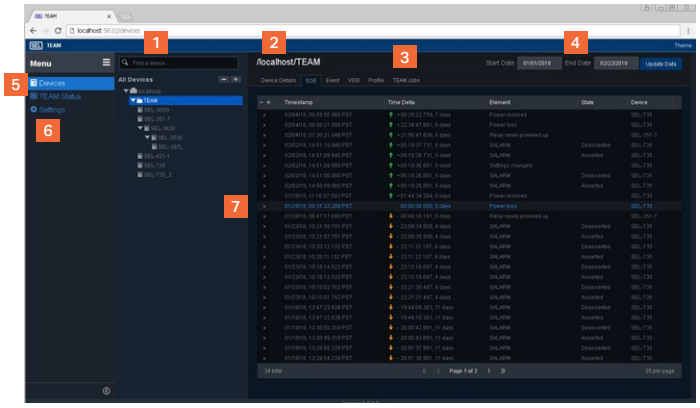
selinc.com/products/5045

TEAM automates the collection of power system data from multiple devices and stores the data in a central location for easy access. When something happens, whether it's a relay trip, system fault, or security notification, TEAM is ready to help with continuous background monitoring, collection, notification, and storage. This ensures that the data are there when you need them to help discover root cause, maintain records for regulatory compliance, and keep your system running at peak efficiency.

TEAM operates as a set of Microsoft Windows services that continuously collects data from devices. All collected data are stored either in the ACSELERATOR® Database (a PostgreSQL database) or at a specified disk location.

TEAM functionality is licensed as four feature sets: TEAM Event, TEAM Profile, TEAM Security, and TEAM Transmission Fault Location (TFL). You can select from the four feature sets to build a TEAM application that best suits your system needs.





1. View multiple ACSELERATOR Databases, and securely provide read-only access to TEAM-collected data.
2. Easily view device configuration attributes with a read-only view organized in a tabbed menu.
3. View and verify TEAM configurations for enabled jobs. You can view the polling frequency, when the job was last executed, and other configuration information.
4. Easily adjust the date range.
5. Access information about your TEAM installation from a network-connected computer. You can verify Windows services, installed versions, and licensing information and review service logs.
6. From the Settings page, enable additional TEAM databases and set the time zone for data viewing.
7. Set a time reference point by simply selecting a data row. The Time Delta adjusts based on the selected row to quickly evaluate the order of operations.

TEAM Event

TEAM Event makes capturing, evaluating, and sharing event data easy. It automatically captures event data from supported SEL and third-party devices in CEV, COMTRADE, and Sequence of Events (SOE) formats. With TEAM Event, you can designate a query interval for TEAM to periodically query devices for new data. For enhanced data collection speeds, you can integrate TEAM with SEL Real-Time Automation Controllers (RTACs). An RTAC provides secure notifications to TEAM of new events and SOE data available for collection.

Oscillographic event data are beneficial for system monitoring, fault analysis, and troubleshooting purposes. With the Web Viewer, Timeline Viewer, Event Viewer, and SOE Viewer in TEAM Event, you can quickly review oscillographic data and identify important events by type, device, location, or timeline.

TEAM Sync, included with TEAM Event, securely transports event and SOE data between database storage locations for automated data redundancy. TEAM Event can also notify appropriate individuals of new system events through TEAM's automatic email or SMS text messaging.

TEAM Profile

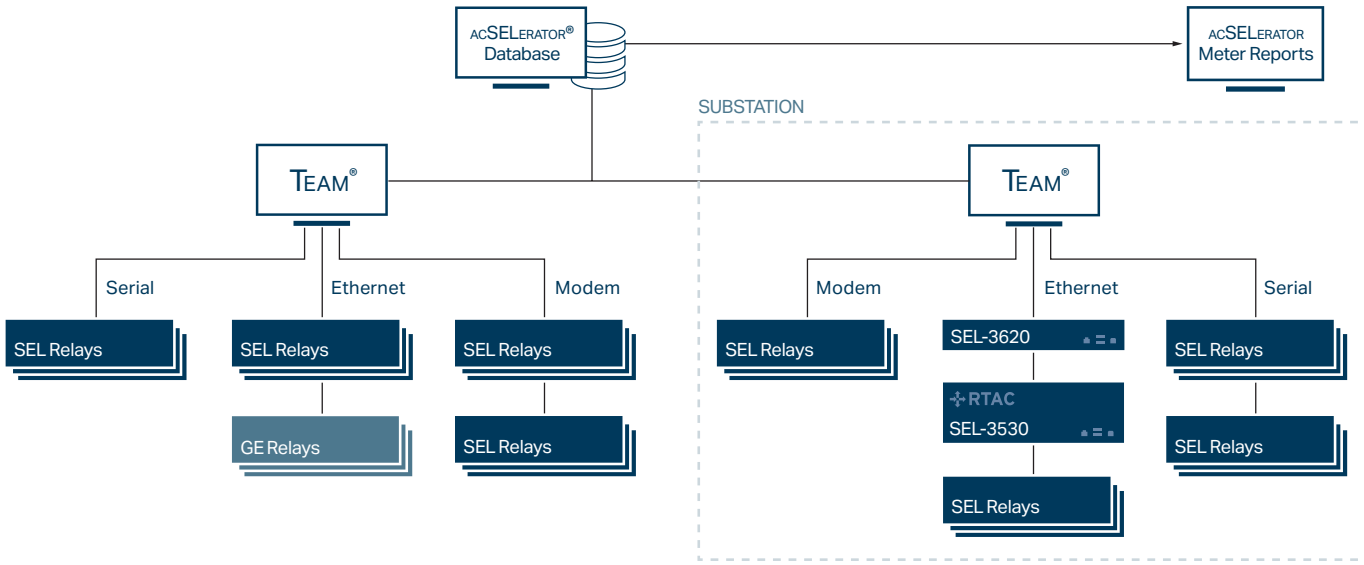
Load data profiling (LDP) information contains energy, demand, voltage, current, harmonic, and frequency trends that are useful when managing a large metered area. TEAM Profile automates the collection of LDP and voltage sag, swell, and interruption (VSSI) data from SEL-735 Power Quality and Revenue Meters and SEL-751A Feeder Protection Relays. With the RTAC Trend Recorder library, you can record IED quantities, collect them with TEAM Profile, and trend them with ACSELERATOR Meter Reports SEL-5630 Software. You can view meter-generated data with Meter Reports to graph forensic data.

TEAM Security

Use TEAM Security to automate password management and maintain a central repository of managed-device interactions and password reports for disaster recovery. TEAM Security works with the SEL-3620 Ethernet Security Gateway and the SEL-3622 Security Gateway to rotate device passwords on a set interval. When configured, TEAM Security also collects the device commands and the password management and Syslog reports generated by the SEL-3620, SEL-3622, and SEL-3025 Serial Shield® after new passwords are generated or on a specified interval.

TEAM TFL

Quickly restoring power after a system fault is a top priority. TEAM expedites accurate fault locating and can email or text results to appropriate individuals. Most digital protective relays or other IEDs use local or single-ended measurements to determine the fault location. To increase accuracy, TEAM TFL uses a two-terminal fault-locating method based on event information collected at the transmission line's end terminals. When a fault occurs, TEAM TFL receives time-stamped event reports from IEDs or digital fault recorders (DFRs) at both terminals of a transmission line, checks to see if the events are associated with any of the configured lines, time-aligns the event records, and executes a two-terminal fault-locating algorithm.



TEAM works with multiple devices in a variety of configurations to meet your system needs.

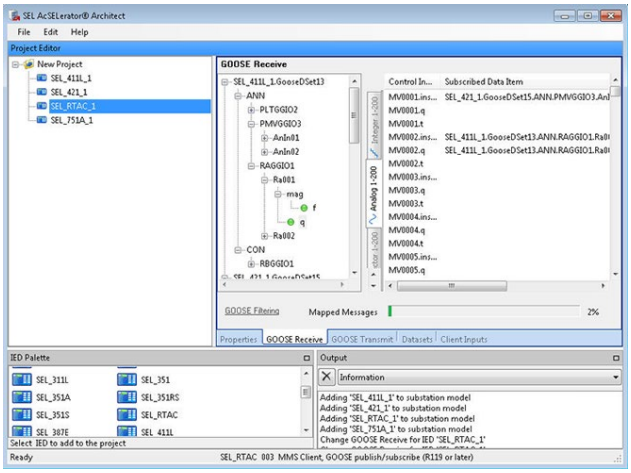
SEL-5032

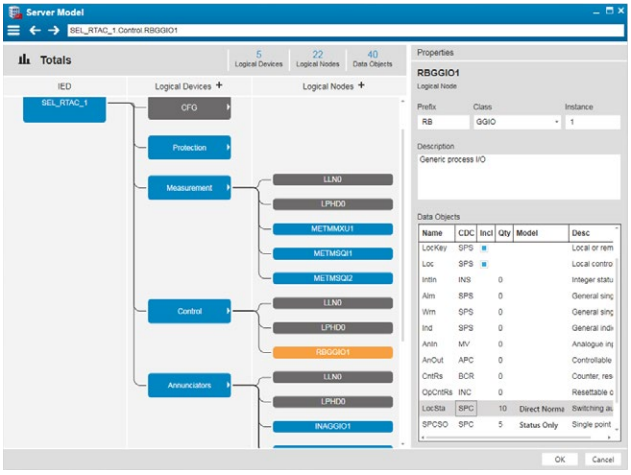
ACSELERATOR Architect® Software

Included With Supported Products

selinc.com/products/5032

Architect configures and documents IEC 61850 systems that include GOOSE, Sampled Values, or Manufacturing Message Specification (MMS) for process bus and SCADA applications.





Simple device integration

Configure SEL devices in IEC 61850 installations using ACSELERATOR QuickSet® SEL-5030 Software and Architect together. Architect provides a means to configure and document the IEC 61850 communications settings between SEL devices and devices from multiple manufacturers.

With Architect, you can import and export Edition 1 and Edition 2 Substation Configuration Language (SCL) files to simplify system implementation. You can also detect and report errors by automatically comparing SCL files with the IEC 61850 requirements. SCL files include:

- SCD—Substation Configuration Description.
- ICD—IED Capability Description.
- CID—Configured IED Description.

The software is easy to apply with drag-and-drop functionality, an IED palette manager, tab orientation, diagnostic windows, and a settings wizard.

Architect also allows you to create and edit custom buffered and unbuffered MMS reports. You can configure the publications and subscriptions for IEC 61850-9-2LE Sampled Values and create and organize custom logical devices.

Server model editor

The SEL Real-Time Automation Controller (RTAC) includes MMS server capability that expands its very flexible data concentration capabilities. In systems where the RTAC needs to transmit SCADA data from various client protocol connections (such as SEL, Modbus, or DNP3) in MMS messages, Architect includes the Server Model Editor for configuring MMS server instances in RTACs.

The Server Model Editor provides a graphical representation of the RTAC server model, which enables quick visualization and convenient editing tools for creating and maintaining MMS server applications.

SEL-5601-2

SYNCHROWAVE® Event Software

Starting price
$520 USD

selinc.com/products/5601-2

SYNCHROWAVE Event helps diagnose a protective relay's behavior during a power system fault. It is a powerful yet easy-to-use solution for displaying and analyzing SEL relay event reports and COMTRADE files.

Analyze relay event data

Plot relay oscillography, display phasor magnitudes and angles, and monitor the digital status. You can navigate through events with integrated zoom and pan functions.

Time-align event reports

Easily coordinate multiple event report times for accurate comparison and analysis of signals from multiple relays or past event reports.

Perform calculations

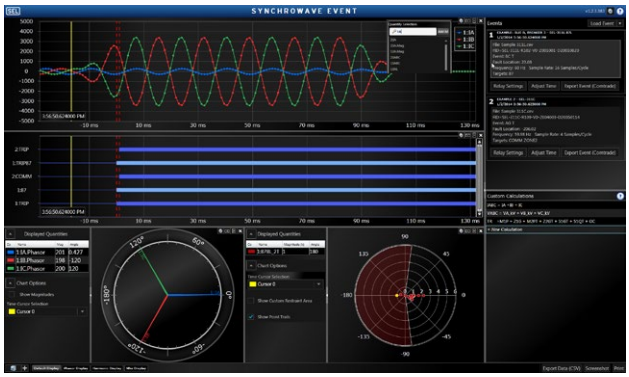
Create equations to analyze specific trip conditions. For quick event analysis, you can instantly plot calculation results. The built-in function library offers endless calculation possibilities.

Visualize distance elements

Analyze protective relay distance element operation with the exact mho circle diagram. The diagram lets you plot and analyze apparent impedance and distance element characteristics.

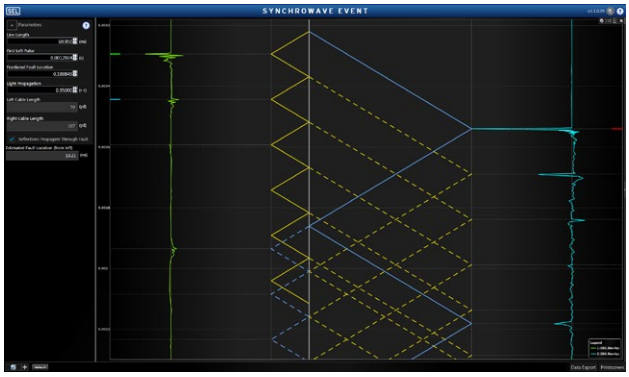
Save analysis setup time

Create personal and relay-specific analysis templates for a custom view into the relay's operation. For more efficient post-event analysis, you can save and share templates.



See traveling waves

The SEL-T400L Time-Domain Line Protection, the SEL-T401L Ultra-High-Speed Line Relay, and the SEL-411L Advanced Line Differential Protection, Automation, and Control System can record traveling-wave data to provide a highly accurate fault location. SYNCHROWAVE Event generates a Bewley lattice diagram from the traveling-wave data to enable visualization, analysis, and understanding of the traveling waves recorded for an event.



SYNCHROWAVE Event generates Bewley lattice diagrams from traveling-wave data to enable visualization and analysis.

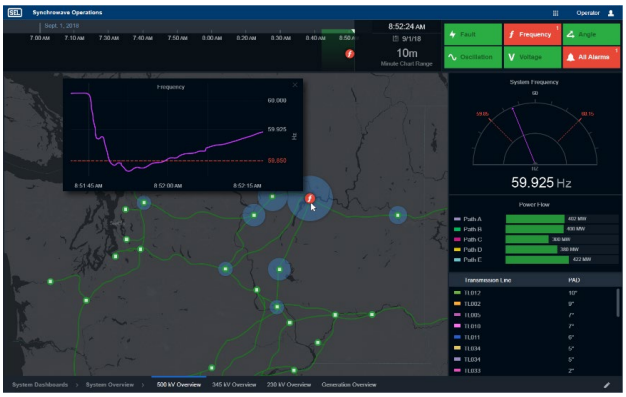
Synchrowave® Operations

Software NEW

Contact SEL for More Information

selinc.com/products/5702

Increase grid safety and reliability through situational awareness with high-resolution time-series data, real-time analytics, and geographical information system (GIS) location information. Synchrowave Operations complements traditional SCADA systems and energy management systems (EMSs) by delivering power system insights that SCADA can't provide.



Wide-area situational awareness

Synchrowave Operations improves situational awareness by providing live, subsecond, and time-aligned information from across the entire power system. Waveform signatures provide additional insight into the dynamic behavior of the power system, which enhances decision making during abnormal conditions.

Intelligent analytics and notifications

Real-time analytics applications constantly monitor streaming data and provide notifications that give the operator access to key event data, including the location and impact, with a single click.

Real-time visualization

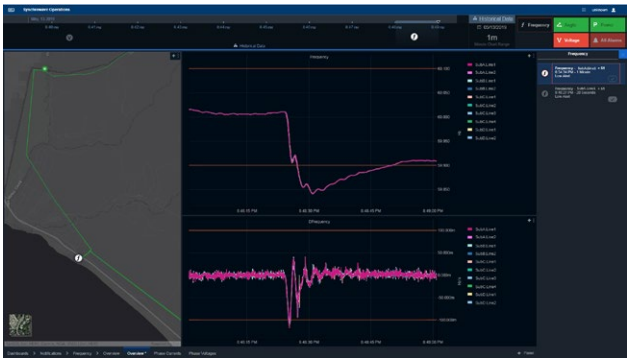
Operators will promptly see the system response after switching a line in or out of service. Unreliable behaviors, like a growing oscillation or a failed breaker reclose cycle, are visible instantaneously with subsecond resolution that enables quick identification and response before the issue impacts the power system.

Renewable energy monitoring

High-resolution data lets operators measure and track the impact of renewables. Integrating renewable energy into the power system can result in reduced system stability and new oscillatory modes. System dynamics from these generation sources change quickly—too fast to see at traditional SCADA rates.

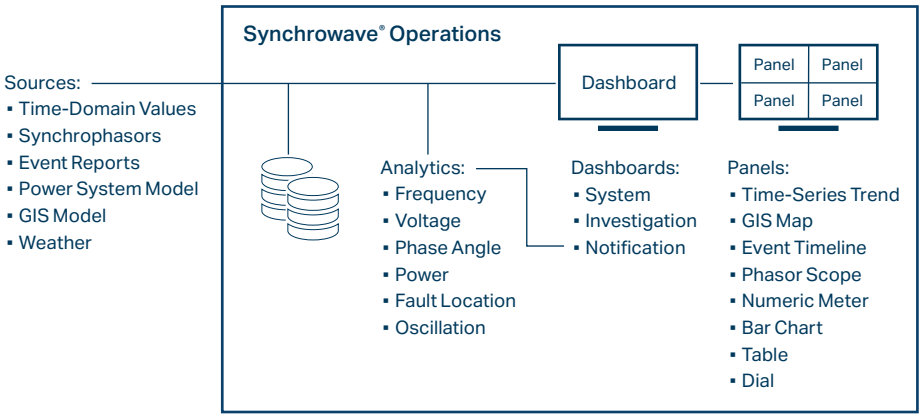
Power system model validation

To accurately replicate events, power system studies rely on accurate system models. Synchrowave Operations will record the system response to system events, such as capacitor switching, generator trips, load shedding, or other events. Comparing the recording to system models lets operators validate system security and reliability.



Synchrowave Operations functional overview

In Synchrowave Operations, time-series sources stream data to a historian, analytics applications, and dashboards. The analytics applications detect power system conditions and provide notifications. Operators then view these notifications and other types of data on custom dashboards built from a selection of panels offering different insights.



Synchrowave Platform

Synchrowave Operations is built on Synchrowave Platform, a scalable, resilient, and secure application platform for real-time power system operations and analytics. Applications on Synchrowave Platform work together to create new solutions for utility grid operation challenges. Each application is independent and communicates with the platform through interfaces, enabling new applications to quickly be developed and deployed.