Services and Support

Engineering Services and Consulting

Today's critical infrastructure systems face a growing number of potential risks varying in scope and complexity.

Our professional services include:

- Automated password management with SEL and other control system devices.
- Deny-by-default firewall configuration.
- IPsec VPNs for site-to-site security.
- Risk and vulnerability assessments.
- Co-op- and municipality-focused security/compliance services.
- NERC CIP and 693 compliance services.
- Secure serial and Ethernet designs.
- System restoration.
- Patch management and firmware update maintenance.
- Virus response.

Regional Technical Support

We have regional offices and branch offices located close to customers throughout North America and the world. To ensure consistent, top-quality services, we share policies, procedures, and standards across all our offices. Because regional offices have direct access to the larger SEL organization, global customers receive the same exceptional services and support, no matter where they are.

UK NETHERLANDS
ITALY KAZAKHSTAN
GEORGIA
SPAIN
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SAUDI ARABIA CHINA
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USA
USA INDIA
MEXICO
COLOMBIA GHANA SINGAPORE
PERU BRAZIL
SOUTH AFRICA
ARGENTINA AUSTRALIA
NEW ZEALAND

Secure Communications and Control Solutions

Secure and protect critical communications and control networks

- Defense-in-depth cybersecurity mitigates threats with sustainable, proactive solutions.
- Security controls and encryption solutions maintain confidentiality, integrity, and availability of critical data.
- Comprehensive management and event-logging tools provide centralized monitoring and system-wide awareness of physical infrastructure and networking assets.
- A broad product line with flexible interface formats provides support for serial and Ethernet networks using both wired and wireless communications.

SEL SCHWEITZER ENGINEERING LABORATORIES

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Example Secure Control System Diagram

System Layers	Product Options
IT Corporate Network Delivers policies, procedures, training, and awareness.	SEL-3355 Computer SEL-3555 Real-Time Automation Controller (RTAC)
L5 | Perimeter OT/IT Outer Firewall (FW) Separates the control system from the enterprise physically and electronically.	SEL-2740S Software-Defined Network Switch SEL-3355 Computer SEL-3620 Ethernet Security Gateway SEL RTAC
L4 | SCADA Operation Center/Substation Human to Machine (H2M) Authorizes users and aggregates system data for analysis and visualization.	SEL-2730M Managed 24-Port Ethernet Switch SEL-2740S Software-Defined Network Switch SEL-3355 Computer SEL-3360 Industrial Wall-Mount Computer SEL-3620 Ethernet Security Gateway SEL ICON® Integrated Communications Optical Network (for Ethernet virtual synchronous networking [VSN])
H2M (Inner FW)	
L3 | Access WAN Segregates H2M from machine to machine (M2M).	SEL-2730M Managed 24-Port Ethernet Switch SEL-2740S Software-Defined Network Switch SEL-3025 Serial Shield® SEL-3061 Cellular Router SEL-3620 Ethernet Security Gateway SEL-3622 Security Gateway SEL-9192 Utility-Grade USB Modem SEL ICON Integrated Communications Optical Network (for SONET/time distribution)
M2M (Edge FW)	
L2 | Automation M2M Provides baseline and continuously monitors the system.	SEL-2240 Axion® SEL-2401, SEL-2407® Satellite-Synchronized Clocks SEL-2488 Satellite-Synchronized Network Clock SEL-2730M Managed 24-Port Ethernet Switch SEL-2740S Software-Defined Network Switch SEL-3031 Serial Radio Transceiver (for SCADA) SEL-3025 Serial Shield SEL-3620 Ethernet Security Gateway SEL ICON Integrated Communications Optical Network (for Ethernet/serial) SEL RTAC
L1 | Protection M2M Isolate and clear faults to ensure safety and availability.	SEL-2032 Communications Processor SEL-2440 DPAC Discrete Programmable Automation Controller SEL-3025 Serial Shield SEL-3610 Port Server SEL ICON Integrated Communications Optical Network (for Ethernet/serial) SEL Relays
Digital/Analog	
L0 | Physical Measure and operate for system safety and stability.	SEL-2240 Axion (Merging Unit) SEL Relays SEL Relays (Merging Units) SEL-651R Advanced Recloser Control SEL-2240 DPAC (Merging Unit)

Private Network
Corporate LAN Network
Laptop/Remote

IT Firewall

DMZ (Perimeter Network)
Read-Only HMI
RTAC SEL-3560E
Real-Time Automation Controller (RTAC)
SEL-2740S Software-Defined Network Switch
Unidirectional OT to IT Ethernet
SEL-3355 Event Historian Computer

SEL-3620 Ethernet Security Gateway

Control Center
SEL-3355 Authentication Server, Event Historian
Operation Center H2M Ethernet
SEL-2740S
Operation Center Transient H2M Ethernet
SEL-3360E Computer Engineering Access
SEL-3360E Substation Engineering Access/SCADA

SEL-3620

Energy Control System WAN SONET
SEL ICON Digital Multiplexer

Substation H2M Ethernet

Substation/Remote Site
SEL-9192 Modem
SEL-3025 Serial Shield
Serial
SEL ICON
Fiber Ring Network
Substation H2M Ethernet
SEL-2730M Managed Ethernet Switch

SEL-3620

M2M Ethernet
SEL-2740S
SEL-3555 RTAC BCU
SEL-3555 RTAC SCU
SEL-2488 GPS Clock

SEL-3610 Serial Port Server
Serial

SEL-421 Relay
SEL-487B Relay
SEL-700G Generator Relay
SEL-787 Transformer Protection
SEL-2411 Control
SEL-351S Protection System

SEL-451 Relay
SEL-2240 Axion Merging Unit
SEL-421 Merging Unit
SEL-651R Recloser Control
SEL-2440 DPAC Merging Unit

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