ICON®

Integrated Communications Optical Network

Extend the life of your time-division multiplexing (TDM) infrastructure with low-risk migration to Ethernet

- Maintain analog voice frequency (VF) circuits for public safety and first responder applications.
- Migrate analog and serial circuits seamlessly to Ethernet transport over Multiprotocol Label Switching (MPLS) and Carrier Ethernet.
- Minimize network disruptions to critical public safety and first responder services with restoration of communications traffic within 5 ms.
- Reduce maintenance and replacement costs: the ICON has a service life of 15+ years and a 10-year warranty.


FIRE DEPARTMENT
FIRE DEPT.

Dependable Communications for Critical Infrastructure®

A dependable system requires network resiliency, comprehensive network management, robust security, and the flexibility to support your current and future communications needs. The SEL ICON is a WAN multiplexer that is configurable for SONET or Ethernet and optimized for critical infrastructure.

Many public safety networks use analog voice and radio equipment for dispatch to first responder communications. Migrating these systems to digital is a significant expense both in capital equipment and personnel training.

The SEL ICON provides a cost-effective, seamless approach to integrating analog-based equipment into a new MPLS or Carrier Ethernet transport network and also provides a solution for replacing leased 4-wire services.

ICON virtual synchronous networking (VSN) preserves the performance characteristics of TDM when converting to Ethernet as a transport protocol. By combining TDM and Ethernet transport options with a comprehensive range of analog voice and serial data interfaces, the ICON makes migrating legacy network technologies to a packet-based solution an easy, low-risk process. The ICON interoperates with MPLS or Carrier Ethernet core networks to provide a hardened operational technology (OT) edge multiplexer for mission-critical applications.

The ICON is designed and built to address demanding communications needs and operate reliably in extreme environments, including public safety and first responder applications.

icon® INTEGRATED COMMUNICATIONS OPTICAL NETWORK

The ICON comes in two available form-factors: the standard 19-inch rack-mount chassis and the half-width cube chassis.

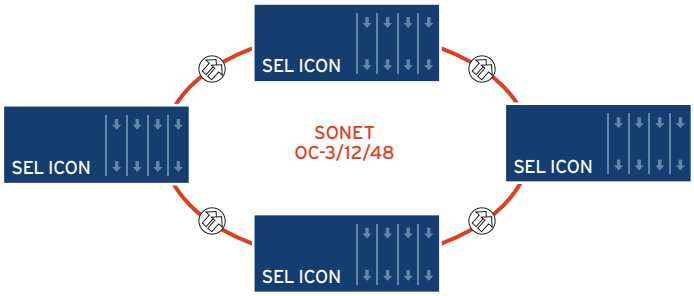
Flexible Transport Options

The ICON operates as a DS1 channel bank, SONET multiplexer, or Ethernet multiplexer and enables a seamless transition between TDM- and packet-based transport formats during in-service operation. With an industrial-hardened design, the ICON provides an OT platform uniquely positioned to manageIP-enabled endpoints for critical infrastructure applications.

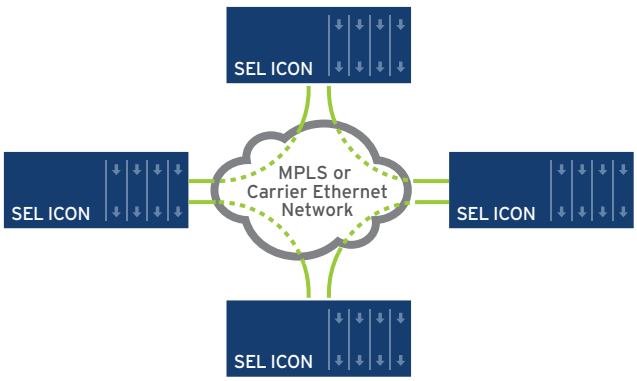
ICON VSN delivers mission-critical traffic with low latency over an MPLS or Carrier Ethernet transport network. It preserves the performance characteristics of TDM with no performance degradation when converting to Ethernet as a transport protocol.

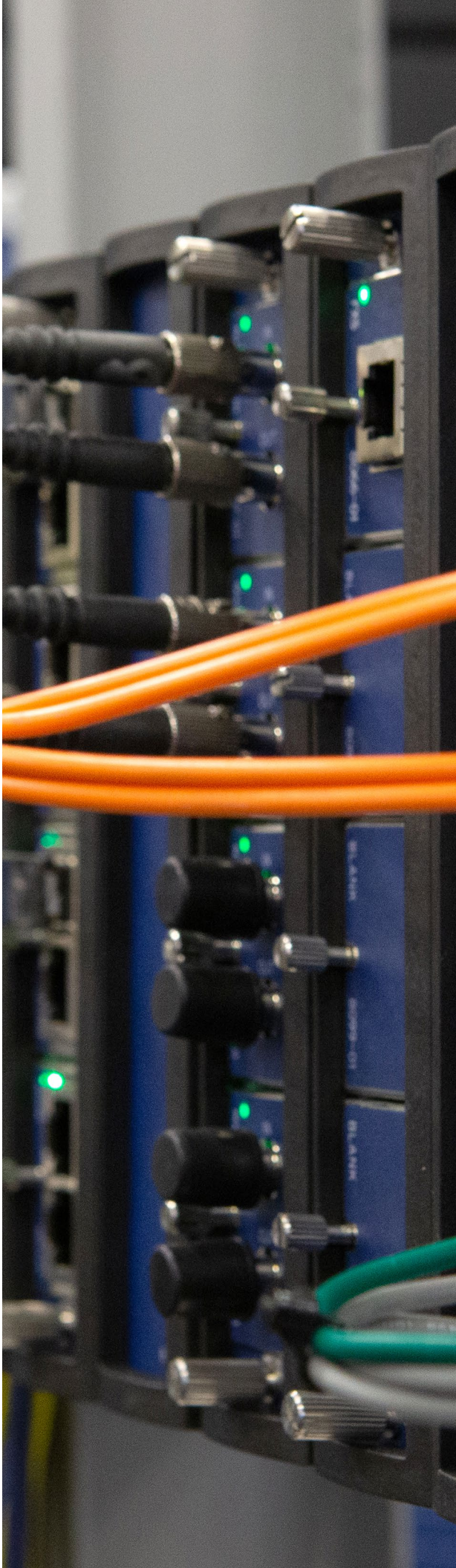
DS1 Channel Bank

SONET Multiplexer



Ethernet Multiplexer

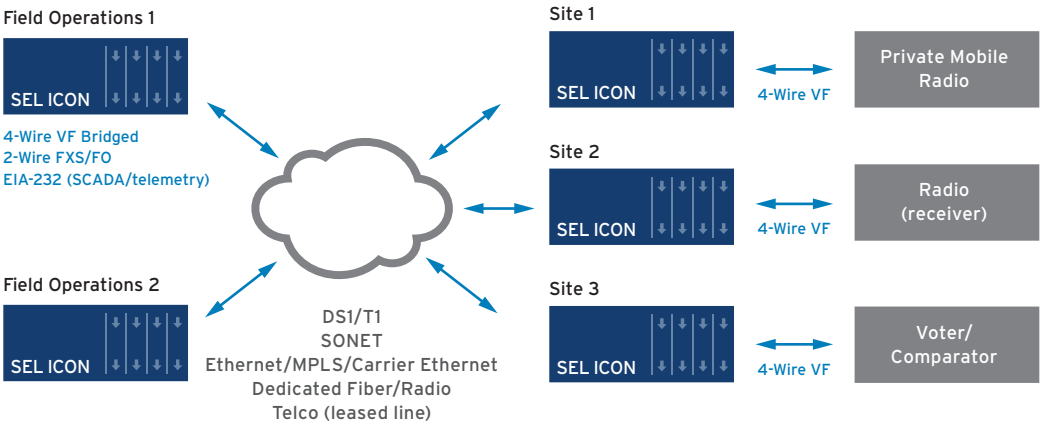




Applications

Public Safety and First Responder Applications

ICON's modular design, dedicated access modules, and flexible line transport options provide support for 2- and 4-wire voice and Radio over IP (RoIP) circuits—ideal for managing first responder voice services. The ICON allows municipalities to maintain existing TDM-based infrastructure or to seamlessly migrate to packet-based MPLS or Carrier Ethernet communication.



Simple and Intuitive Network Management

ICON networks are managed by either standalone SEL-5051 Client Network Management System (NMS) Software or a combination of SEL-5051 Client and SEL-5052 Server NMS Software.

SEL-5051 Client NMS Software

SEL-5051 software offers the following features for the configuration and management of your ICON network.

Graphical Network Representation

Provide network discovery and graphical display of a complete ICON network. You can view the status of each ICON node and associated line links.

Configuration Management

Provision Ethernet and TDM circuits. You can manage firmware upgrades remotely and schedule upgrades for specific times and dates.

Alarm Management

View, sort, filter, and archive the time-stamped alarm history for each node on the network.

Event Management

Track administrator and individual user access. You can monitor valid and invalid user login attempts as well as session settings change logs.

Security Management

Automatically generate security reports for compliance with NIST security logging.

Performance Monitoring

Monitor the performance of TDM and Ethernet communications using comprehensive network statistics.

SEL-5052 Server NMS Software

SEL-5052 software offers centralized user security, settings, alarms, and event management.

User Authentication

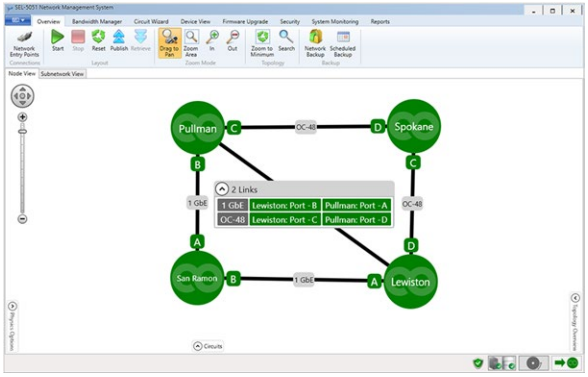
Improve the security of the ICON network by having your Lightweight Directory Access Protocol (LDAP) servers authenticate and authorize users on the ICON network. Once set up, the login mode allows LDAP or local authentication.

Circuit Removal

Enable authorized users to remove a circuit by completely deprovisioning all settings and releasing bandwidth to be reused for a future circuit.

System Health Check

Analyze the ICON network for common configuration errors to prevent issues with network operation.



SNMP Traps

Securely send ICON network alarm information to third-party network management systems for centralized alarm aggregation and management.

Circuit Trace

Collect and analyze the settings from a node to identify and show configured circuits and their settings.

ICON Specifications

General		
Line Module	**8022-01 Enhanced Protected Line Module**	SFP ports A/B/C/D: 155 Mbps, 622 Mbps, 1 Gbps, or 2.4 Gbps IRIG-B out: 2 BNC
Server Module	**8030-01 Server Module**	NMS ports: USB, RJ45 GPS antenna: TNC IRIG-B in: BNC
Chassis and Power Modules	**19-Inch Rack Mount Chassis**	
	8001-01 Full 19-Inch Chassis	10 available slots
	8011-01 HV AC 120—240 V, IEC C6 Line Cord	Supply voltage: 102—264 Vac, 50/60 Hz
	8011-02 HV AC/DC 120—240 V, Terminal Block	Supply voltage: 102—264 Vac, 50/60 Hz or 88—300 Vdc
	8011-03 MV DC 24—48 V, Terminal Block	Supply voltage: 19—58 Vdc
	Half-Width Cube Chassis	
	8002-01 Half-Width Chassis	
	8010-01 HV AC 120—240 V, IEC C6 Line Cord	Supply voltage: 102—264 Vac, 50/60 Hz
	8010-02 HV AC/DC 120—240 V, Terminal Block	Supply voltage: 102—264 Vac, 50/60 Hz or 88—300 Vdc
Access Modules	**8036-01 Ethernet Bridging Access Module**	100/1000 Ethernet ports: 4 SFP 10/100/1000 Ethernet ports: 4 RJ45
	8036-02 Ethernet Bridging Access Module With PTP	100/1000 Ethernet ports: 4 SFP 10/100/1000 Ethernet ports: 4 RJ45
	8053-11 Data Async Submodule	Ports: 2 RJ45 Standards: EIA-232, EIA-422, EIA-485
	8053-12 Async-CB Submodule	Ports: 2 RJ45 Standards: EIA-232, EIA-422, EIA-485
	8065-11 4-Wire VF Submodule	Ports: 2 RJ45
	8065-12 4-Wire VF Bridging Submodule	Ports: 2 RJ45
	8066-01 2-Wire FXS Submodule	Port: 1 RJ11
	8067-01 2-Wire FXO Submodule	Ports: 2 RJ11
	8057-11 DS1 Async Submodule	Ports: 4 RJ48C
	8057-12 DS1 Sync Submodule	Ports: 4 RJ48C
	8057-03 DS1 Psync Submodule	Ports: 4 RJ48C
System Specifications	**Network Topologies**	Linear and multiple rings with single or dual interconnected nodes, plus linear spur and subtended ring topologies
	Path Switching Time	<5 ms
	Convection-Cooled	No fans
	Operating Temperature	—20° to +65°C (—4° to +149°F)
	Mounting	8", 19", or 23" rack or panel mount

SCHWEITZER ENGINEERING LABORATORIES

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