

Physical Security Technologies for Electrical Utility Infrastructure

Intelligent. Innovative. Integrated.

PHYSICAL SECURITY TECHNOLOGIES FOR ELECTRICAL UTILITY INFRASTRUCTURE

About Senstar

Security Challenges Application Solutions Senstar Products Deployment Example System Integration Q & A



ABOUT SENSTAR

With intelligent video management, video analytics, access control, and innovative perimeter intrusion detection systems, Senstar offers a comprehensive suite of proven, integrated technologies.

PIDS Facts	VMS Facts
35+ years experience	18+ years experience
50,000+ km of installed sensors	25,000 VMS deployments
World-wide service and support	World-wide service and support
World's largest privately owned PIDS test facility (harsh environment)	Leader in intelligent video management solutions



ABOUT SENSTAR

Key Facts

- Extensive global presence:
 - Headquarters Ottawa, Ontario, Canada
 - Manufacturing facility Ottawa
 - Video and SMS product center Waterloo, Ontario, Canada
 - Sensors product center Ottawa
 - Sales and support centers Canada, USA, Mexico, Brazil, UK, Germany, Spain, Dubai, Malaysia, Singapore, Philippines, China
- Products deployed at tens of thousands of sites in over 100 countries
- 350 employees worldwide, 150+ technical staff
- Strong balance sheet, cash on hand, no debt
- Proven track record for long-term stability and support



ELECTRICAL UTILITY INFRASTRUCTURE Security Challenges



ENV/NY///S

THT IS

The Physical Security Challenge

- Ensure the continuity of a critical resource that underlines modern society
- Ensure workplace safety and safety of the general public
- Support conformance to government regulations
- Minimize direct losses to theft and vandalism
- Complement operational workflows
- Be cost-effective for sites with differing security requirements:
 - Generating stations
 - Transmission substations
 - Distribution substations, which are often adjacent to residential areas
 - Other sites with high-value assets (e.g. storage yards, solar panels)



Physical Security Threats

- **Copper theft** the most common threat
 - Typically results in service outage
 - Can also endanger workers who enter a site unawares and come upon loose energized wires or equipment that is no longer safely grounded.
 - Hazardous to the perpetrators, leading to potential liability claims
- Vandalism Similar outcomes to theft
- Terrorism/Hacktivism Low probability but high impact event



Why Consider Security Technology?

- By themselves, physical security barriers like fences or walls only have limited deterrence value
- Threats are distributed and on-going
- Provisioning a guard force is cost-prohibitive
- A sensible combination of physical security technologies is the only cost-effective solution for providing physical security for all critical elements of the grid

The cost of a serious incident (damage, liability, fines) can dwarf the cost of the on-site security equipment



Physical Security – A Systematic Approach

- Due to the criticality of the grid, many governments have introduced regulations to ensure that physical security is being evaluated and addressed systematically
- In North America for example, the North American Electric Reliability Corporation (NERC) has responded to the regulations with standard CIP-014-2 covering physical security
- CIP-014-2 recommends a systematic approach to physical security based on six key elements:

Deter, Detect, Delay, Assess, Communicate, and Respond

• This segmentation provides a good common-sense way to analyze any physical security requirement



Security Function: DETER

3

Avoidance of security incidents in the first place is always the best outcome

Sensors trigger on-site deterrence systems (e.g. strobing of perimeter lighting at intrusion location or broadcast loudspeaker messages).

Can be done at Alarm or Pre-Alarm stage.

Video analytics trigger deterrence mechanisms (e.g. people or vehicle activity near perimeter can increase site illumination)

Video management system support 2-way audio, enabling voice-down capabilities

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Security Function: DETECT

Security technology can reliably detect intrusion attacks

Detect activity at entrances with gate sensor and outdoor people tracking analytics

Fence sensors detect attempts to cut, climb, lift, or break fence fabric

Detect tunneling via buried fiber optic acoustic sensors

Use license plate and/or face recognition for two-factor authentication to guard against false or misappropriated credentials

Security Function: DELAY

Detection at the perimeter provides additional time for security forces to assess and respond



Security Function: ASSESS

Integrating video management systems with perimeter sensors maximizes situational awareness



Security Function: COMMUNICATE

An effective response requires that the right people have the right data at the right time

Equip security personnel with the information they need to effectively monitor and secure hundreds of sites from a central location:

- Automatic display of alarm procedures
- Map-based displays with intrusion location





Provide response forces with critical information:

- Email, SMS, and mobile app alerts
- View still images + live and recorded video



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Security Function: RESPOND

Actions:

• Engage response force – on-site, remote operators, or law enforcement agencies

Post-incident analysis:

- Intelligent video search via analytic metadata
- Share relevant video with auto-summary to law enforcement via secure Senstar cloud service



Application Solutions



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APPLICATION SOLUTIONS

Nuclear Power Plants

- Requirement
- Nuclear Regulatory Commission requirements (NRC 5.44)
- Intrusion threats (all types, especially terrorism and sophisticated attacks)
- Site characteristics
- Perimeter around reactors & generators
 Around 1 to 1.5 km
- Two layers of PIDS
- VMS, SMS in local SOC

Perimeter of Nuclear Facility (XField + Fence Sensor)



XField

Volumetric sensor:

- For critical perimeter security
- High detection zone with narrow horizontal coverage
- Free-standing or fence-mounted
- Recommended system per 5.44 of NRC Guide



FlexZone

Fence-mounted locating sensor:

• Cost-effective solution for second line of defense

UltraWave Microwave Sensor

 Intrusion detection for gates and open areas





APPLICATION SOLUTIONS

Transmission Substations

- Requirement
- Regulatory compliance
- Protection against theft, vandalism, and liability

Substation with Senstar LM100

Site characteristics

- Perimeter around transformers and switches
- Mostly fenced, sometimes walled
- VMS, SMS at central SOC



FlexZone

Fence-mounted locating sensor:

- Effective and affordable
- Scalable for any size of perimeter

FiberPatrol FP400 or FP1150

Fence-mounted fiber optic sensor:

• Eliminates concerns over EMI-induced voltages on conductors and lightning damage

Senstar LM100

Symphony VMS

- 2-in-1 intrusion detection and lighting solution
- Deter and detect intruders



Scalable, affordable video management with built-in analytics:

- Outdoor people and vehicle tracking
- PTZ auto-tracking





APPLICATION SOLUTIONS

Distribution Substations

- Requirement
- Protection against theft, vandalism, and liability
- Site characteristics
- Perimeter around xformers and switches
- Mostly fenced, sometimes walled
- Single-layer PIDS
- VMS, SMS at central SOC



FlexZone

Fence-mounted locating sensor:

- Effective and affordable
- Scalable for any size of perimeter

FiberPatrol FP400

Fence-mounted fiber optic perimeter sensor:

• Eliminates concerns over EMI-induced voltages on conductors and lightning damage



Senstar LM100

- 2-in-1 intrusion detection and lighting solution
- Detect and deter intruders



Symphony VMS

Scalable, affordable video management with builtin analytics:

- Outdoor people and vehicle tracking
- PTZ auto-tracking





APPLICATION SOLUTIONS Solar Plants

Requirement

- Protection against theft, vandalism, and liability
- Site characteristics
- Huge range in perimeter sizes
- Budget-conscious
 - VMS, SMS in central SOC
 - Need economically viable solutions



FlexZone

Fence-mounted locating sensor:

- Effective and affordable
- Easy to install on existing fence
- Scalable for any size of perimeter

FiberPatrol FP400

Fence-mounted fiber optic sensor:

- Effective and affordable
- EMI and lighting immune

Symphony VMS

Scalable, affordable video management with built-in analytics:

- Outdoor people and vehicle tracking
- PTZ auto-tracking







ELECTRICAL UTILITY INFRASTRUCTURE Senstar Products



EM///N///E

Senstar products

Description

- Hybrid perimeter intrusion detection and intelligent lighting solution
- Accelerometer embedded in luminaire provides detection function – locates alarms to the luminaire
- Optimized optics provide uniform, full spectrum, LED-based lighting
- Lighting is programmable based on sensor alarms and schedule

Key Benefits

- Integrated deterrence capabilities
- Save up to 95% in lighting operational/maintenance costs
- Encrypted wireless mesh network eliminates need for communications wiring





Senstar LM100 Technical Details

Main Features

- Detect intrusions to closest luminaire
- Supports any fence height, spaced 3 to 6 m (10 to 20 ft) apart
- Programmable schedule and light intensity
- Settings may be applied to all, zone-specific, or individual luminaires

LED Specs

- Brightness: 53 lux per luminaire (163 total lumens generated)
- Instant-on illumination and strobing

Environment Specs

- Weather: -40 to 70 °C (-40 to 158 °F), 100% humidity
- Rugged all-weather hinged aluminum UL enclosure, NEMA Type 4X (IP66)

Electrical Specs

- Consumption: 2.5W per luminaire
- Wiring: 14 or 16 AWG, 2-wire

Networking Specs

- Encrypted wireless mesh eliminates on-fence communications wiring
- Ethernet, RS-422 and fiber communication card options
- Common integration interfaces (API, ASCII, or I/O)





senstar products FlexZone

Description

- Sensor cable attaches directly to surface (fence, wall, or building structure)
- Alarms reported by zone and cable distance (±3 m)
- Cost-effective for small sites but scalable for all sites
- Up to 600 m (1968 ft) of coverage per processor
- Up to 60 reporting zones per processor

Key Benefits

- Low cost, easy to install
- Works with virtually all fence types
- Reduced infrastructure (power & comms over sensor)
- Software-defined zones
- Ranging minimizes weather-generated nuisance alarms, assists in locating problematic areas (e.g. loose fence fabric or sign)



FlexZone Technical Details

Main Features

- Detect and locate intrusions (600 m/1968 ft per processor)
- Pinpoint intrusions to within ±3 m (10 ft)
- Sensor cable in standard and armored versions
- Available in two models:
 - FlexZone-4: 4 software-defined zones, zone-reporting
 - FlexZone-60: 60 software-defined zones, location-reporting

Environment Specs

- Weather: -40 to 70 °C (-40 to 158 °F), 100% humidity
- Rugged all-weather hinged aluminum UL enclosure, NEMA Type 4X (IP66)

Electrical Specs

- Low power (<2.5W), PoE support via Ethernet card
- Up to 5 processors per power supply (power over sensor cables)

Networking Specs

- · Communications over sensor cable reduces network infrastructure
- Ethernet, RS-422 and fiber communication card options
- Common integration interfaces (API, ASCII, or I/O)



Output Relay Integration



Networked Integration

SENSTAR PRODUCTS FiberPatrol FP1150

Description

- Fiber optic sensor suitable for fence, wall, and buried applications
- Alarms reported by zone, cable distance or GPS (±4 m)
- Ideal for large sites, borders, and buried pipelines
- Up to 100 km (62.1 mi) of coverage per processor

Key Benefits

- No powered or conductive components in field
- EMI and lightning immune
- Unused fibers can be reused for other applications (e.g. communications), 25+ year cable service life
- Cut-immune configuration



FiberPatrol FP1150 Technical Details

Main Features

- Detect and locate intrusions:
 - Fence, wall, and buried perimeter applications: Up to 80 km (49.7 mi) per processor
 - TPI applications: Up to 100 km (62.1 mi) per processor
- Pinpoint intrusions to within ±4 m (15 ft)
- Up to 1440 software-defined detection zones
- · Sensor cable in standard and armored versions
- Cut-immune configuration: locates up to point of cable cut
- 4U height, 19-inch rack-mount Sensor Unit

Environment Specs

- All-weather sensor cable: -40 to 70 °C (-40 to 158 °F)
- Sensor unit: 0 to 50 °C (32 to 122 °F), humidity 20–80% non-condensing

Electrical Specs

- Dual redundant power supplies
- Consumption: 200W max

Networking Specs

- Dual Gigabit Ethernet
- Common integration interfaces (API, ASCII, or I/O)





SENSTAR PRODUCTS FiberPatrol FP400

Description

- Fiber optic sensor attaches directly to fence
- Alarms reported by zone (4 zone per processor)
- Ideal for small sites
- Up to 300 m (984 ft) of coverage per zone

Key Benefits

- No powered or conductive components in field
- EMI and lightning immune
- Up to 20 km (12.4 mi) of lead-in cable
- Unused fibers can be reused for other applications (e.g. communications)



FiberPatrol FP400 Technical Details

Main Features

- 4 detection zones per processor, up to 300 m (984 ft) per zone
- Up to 20 km (12.4 mi) of non-sensing lead-in cable
- Light-weight, easy to install fiber optic sensor cable
- · No conductive in-field components

Environment Specs

- Outdoor-rated processor: -40 to 70 °C (-40 to 158 °F)
- Installable indoors or outdoors inside protective enclosure

Electrical Specs

• Low power (<2.0W), built-in PoE

Networking Specs

- Ethernet interface (built-in)
- RS-422 and fiber communication card options
- Common integration interfaces (API, ASCII, or I/O)



Output Relay Integration



senstar products XField

Description

- Uses parallel wires to generate an electrostatic field
- Used in the nuclear industry, it provides a virtual barrier that not only detects people moving through it but also their speed and size

Key Benefits

- A recommended sensor per Nuclear Regulatory Commission Guide 5.44 for perimeter intrusion detection systems
- Narrow detection zone, heights up to 7.3 m (24 ft)
- Ultra-low Vulnerability to defeat (Vd)
- Exposed wires act as a visual deterrent



SENSTAR PRODUCTS XField Technical Details

Main Features

- Fence or free-standing pole mounting
- Dual 4-wire or 5-wire zones (A&B)
- Zone lengths: Up to 150 m (500 ft)
- Detection height (fence-mounted): Up to 7.3 m (24 ft) (10-wire, A&B stack)
- Detection width: Less than 0.5 m (20 in) (walk-up detection of 35 kg (77 lb) person)

Environment Specs

- Weather: -40 to 70 °C (-40 to 158 °F), 100% humidity
- Rugged all-weather hinged aluminum UL enclosure, NEMA Type 4X (IP66)

Electrical Specs

Low power (<6W)

Networking Specs

- RS-422 and fiber communication card options
- Common integration interfaces (API, ASCII, or I/O)





Gate and Gap-Fill Solutions

Wireless Gate Sensor

- Detects movement and/or vibration on gates and doors of all times
- Includes auxiliary input to monitor status of gate contact
- Available in solar powered and battery-only versions

UltraWave Microwave Sensor

- A fully digital bi-static microwave sensor that generates a cigarshaped field between a Tx/Rx pair (up to 200 m or 656 ft)
- Ideal for gates, open areas and security backfill
- Reliable detection in all weather conditions, including rain, fog and snow



Wireless Gate Sensor Technical Details

Main Features

- Accelerometer analyzes vibration, motion, and position data
- Compatible with virtually all gate types (swinging, lifting, sliding (cantilever), garage etc)
- Compatible with FlexZone and Senstar LM100 (up to 4 WGS per processor)
- Solar panel and battery-only versions
- Reports intrusion, supervision, RF link, and auxiliary input alarms

Environment Specs

- Weather: -40 to 70 °C (-40 to 158 °F), 100% humidity
- Rugged all-weather acrylic casing, NEMA Type 4X (IP66)

Electrical Specs

- Solar panel version:
 - Eliminates need to replace batteries
 - Super capacitor design eliminates battery memory or cycle life limitations
 - On-board emergency power
- Battery version:
 - 1.5V "D" battery, approximately 1 year of operation

Networking Specs

- Encrypted 128-bit wireless link to receiver card
- Unlicensed operation in regional ISM band





UltraWave Technical Details

Main Features

- Detection range:
 - Walking target: 5 to 200 m (16 to 656 ft)
 - Crawling target: 5 to 150 m (16 to 492 ft)
 - Commando roll: 5 to 100 m (16 to 328 ft)
- Clear zone with total width of 4% of the Tx-Rx separation distance required

Environment Specs

- Weather: -40 to 70 °C (-40 to 158 °F), 100% humidity
- High-impact ABS plastic, marine white enclosures

Electrical Specs

• Low power: Transmitter 1.5W, Receiver 2.6W

Networking Specs

- · Wireless link between Transmitter and Receiver reduces cabling
- Ethernet, RS-422 and fiber communication card options
- Common integration interfaces (API, ASCII, or I/O)





Symphony Common Operating Platform

- Scalable, high-performance open architecture
- Integrated alarm management and on-screen controls for cameras, two-way audio, perimeter intrusion, access control, and I/O devices
- Built-in video analytics
- Intelligent video search via metadata
- Intuitive Windows, web, mobile and thin client interfaces



Symphony Architecture: Scalable and Open

Symphony installs on off-the-shelf hardware, supports thousands of network devices as well as industry standards (ONVIF profiles S and G), and is designed to have a low server footprint.

- Multi-server architecture (no separate management or analytic servers, one installation package)
- Embedded failover (no need for Windows Clustering)
- Licensed per-camera, not by individual servers or workstations



Symphony

Windows Client

SENSTAR PRODUCTS Video Analytics

- Video analytics can be enabled in real-time without additional servers
- Server or edge-based
- Licenses are movable from one camera to another
- Server-based analytics work with virtually all cameras, including low-light and thermal

SENSTAR Devices Security	y Rules Li	censes Settings				Farm ID 125671	Web Client	Log Out	Help
Cameras Temp	lates Hardwa	are Integrations Access Devices	Device Tree	e Carousels	5				
Cameras									
3) Parking Lot Er	ntrance	Delete							
General	Add-Ons								
PT7	Auu ons	,							
112	Analytic License Obtained			Analytic License Requested					
Video	Core Analytic		Core Anal	ytics	Ŧ	Update License			
Privacy Mask		Name		Туре	Description				
Digital I/O	OFF	TCP Listener		Other	Accepts metadata into Sym	phony.			
Add-Ons	OFF	Analog Video Signal Loss		PC Analytic	Detects if the video input is indicate signal loss.	one solid colour which ma	У		
Gloups	OFF	Automatic License Plate Recognition -	Core	PC Analytic	(BETA) Recognition of licen	se plates from various regi	ons.		
Video Storage Auxiliary	ON	Camera Tampering		PC Analytic	Detects if the video has bee obstruction, spray painted	en compromised (field of vi lens, camera position altere	ew ed).	Configure	
	OFF	Crowd Detection		PC Analytic	Detects size and density of	crowds of people			
	ON	Image Stabilization		PC Analytic	Stabilize the video stream, movements, for use with a	when experiencing small nother video analytic add-o	n.		
	OFF	Indoor People Tracking		PC Analytic	Can be used for robust peo environments.	ple tracking in indoor			
	ON	Left and Removed Item Detection		PC Analytic	Detects left or removed iter	ms		Configure	
	OFF	Motion Detection		PC Analytic	Detects pixel changes in the	e scene.			
	ON	Outdoor People and Vehicle Tracking		PC Analytic	Can be used for robust peo outdoor environments.	ple and vehicle tracking in		Configure	
	ON	PTZ Auto-Tracking		PC Analytic	Perform auto-PTZ tracking movements. Requires a mo locate object.	using smooth, continuous tion tracking add-on to init	ially	Configure	

Senstar Analytics (1 of 2)

Analytic	Description	Applications	Example
Camera Tampering	Detects if video has been compromised through view obstruction or position-altering	Detecting camera tampering	
Signal Loss	Detects if analog video input is one solid color, which may indicate signal loss	Detecting video loss with analog cameras/encoders	
Outdoor Tracking	Robust outdoor person and vehicle tracking for dynamic outdoor environments. Unlike simple motion detection, analytic compensates for weather, shadows, and small objects. Can be used a trigger for active deterrent devices, including the Senstar LM100 and 2-way intercoms	Tripwire, alarm zone, loitering, and people counting for outdoor environments	
Auto-PTZ	Performs auto-tracking. Requires event trigger for initial object detection (e.g. via Outdoor Tracking analytic). Enables operators to perform other tasks during security events Maximizes functionality of PTZ cameras	Alarm trigger	

Senstar Analytics (2 of 2)

Analytic	Description	Applications	Example
Left and Removed Item Detection	Detects left/removed items based on user-defined min/max object size	Detecting left or removed objects	Aum - Left/Renoved Itams - Left Behnd
ALPR	Detects and captures license plates	License plate detection	
Face Recognition	Detects faces and compares against allow/disallow lists	Two-factor authentication processes for access control	

E-Series Description

- Compact, fanless server appliance
- Ideal for retail stores, gas stations, and restaurants

R-Series Description

- Dell enterprise-grade hardware
- Mini-tower, 1U and 2U form factor options
- Scalable solutions with high availability, hot-swappable components and server redundancy

Key Benefits

- Validated hardware for optimal performance with comprehensive 3-year warranty
- Simplifies ordering and support
- Different hardware options based on requirements
- Dell on-site support for R-series hardware



E-Series Physical Security Appliance



Deployment Example: Electrical Storage Yard



DEPLOYMENT EXAMPLE: ELECTRICAL STORAGE YARD

Overview

The facility stores high-value assets. Located adjacent a residential area, cable theft and unauthorized access are a significant concern. The Senstar LM100 was installed along the perimeter to increase security:

- System detects and locates any attempt to cut, climb, or lift the fence fabric
- Uniform lighting along the perimeter improves camera performance
- LEDs optically arranged for downward focusing to minimize light pollution

Facility before the installation



A FlexZone system was also installed to provide a direct performance comparison of the two technologies.

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DEPLOYMENT EXAMPLE: ELECTRICAL STORAGE YARD Site Installation

Facility after installation (daytime)



Perimeter map





LM100 Illumination Performance



LM100 Illumination Comparison



DEPLOYMENT EXAMPLE: ELECTRICAL STORAGE YARD

Real-World Performance – "Windpocalypse"

Wind gusts up to 91 km (56 mph) for 12 hours:

- No nuisance alarms generated
- Alarms only generated by gate usage during business hours (both FlexZone and LM100)



Roof in Sandy Hill blows off in the high winds



Windpocalypse Now: **Storm** wreaks havoc in Ont. neighbourhoods CTV News - 2 hours ago The invisible hand of Mother Nature caused plenty of neighbourhood chaos in

southern Ontario on Wednesday, bringing down trees, **damaging** roofs, knocking out power, toppling a KFC sign and scattering garbage and recycling bins during a windstorm that was widely documented on social media.



Ontario storm: Power cut to at least 100000; huge pileup shuts ... CTV News - 20 hours ago

Environment Canada issued warnings Wednesday morning about winds gusting up to 90 km/h for a large swath of southern Ontario and parts of Quebec, including Toronto, Montreal and Ottawa. As of Wednesday afternoon, winds had caused a crane collapse in Mississauga, Ont., causing damage but no ...

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ELECTRICAL UTILITY INFRASTRUCTURE System Integration Options



PIDS Example: Standalone System





PIDS Example: Networked System





Senstar Network Manager

The Senstar Network Manager software is an intelligent gateway that provides an interface between the perimeter sensors, other connected security devices, and Senstar/third-party security software (VMS, SMS, PSIM etc).



- Sensor connectivity
- Ethernet, fiber and RS-422 networking
- Support for star and loop networks
- Communication over sensor cables (FlexZone, OmniTrax)
- Configuration via local (USB) and network connections

Network Manager software

- Runs on PC as a service
- Supports all Senstar sensors
- Built-in alarm logic engine
- Minimal system requirements
- Redundancy with failover support
- Alarm and event logging
- Diagnostic utilities

Integration options

- Senstar software:
 - Symphony VMS
 - StarNet 2 SMS
 - Senstar AIM
- API-based integration with third-party VMS, SMS, or PSIM software
- ASCII text over TCP/IP or serial
- Hardware I/O

PIDS + VMS + Senstar Access Control



Symphony Integration – Alarm Console

- Sensor alarms in Symphony are displayed alongside video analytic and access control events.
- Each event may be linked to multiple cameras and graphically displayed on a site map, maximizing operator assessment capabilities.
- Bidirectional communications enable automated and manual control over sensor and camera I/O interfaces.



Benefits of Integrating PIDS with VMS and Video Analytics

Immediate assessment is critical for a fast, effective response. Integrating perimeter sensors with the VMS and analytics provides several benefits:

- Track persons and vehicles outside and inside the perimeter
- Use "pre-alarm" events to direct PTZ cameras before intrusion occurs
- Automatic camera call-up using zone/location information
- Combine perimeter sensor and video analytic events to reduce nuisance alarm rate
- Use perimeter sensors to improve post-incident analysis (fence data + intelligent video search)

Multiple technologies may be used together as part of a multilayered approach. In this example, a people tracking analytic is applied to a video stream from a thermal camera and works in combination with a fence-mounted sensor. Outdoor People and Vehicle Tracking analytic



Third-Party Integrations

Senstar has extensive experience integrating with a wide range of third parties. For information on a specific integration, including the products supported (e.g. Senstar PIDS, Symphony VMS, video analytics) and the scope of features, contact Senstar.



Looking to the Future – A Deeper Integration

- "Sensor fusion" integrating sensor technologies to receive the advantages of both while avoiding their disadvantages
- Goal: achieve a high probability of detection while maintaining a low nuisance alarm rate or low vulnerability to defeat
- Existing systems use Boolean or timebased logic, next-generation systems to process data via fusion engine:
 - Pattern recognition
 - Artificial intelligence
 - Multi-sensory approach



Senstar has the unique capability to fuse sensor and video analytic data over a common platform.

Senstar Common Operating Platform

Senstar is uniquely situated in the industry to provide a fully integrated common operating platform.

- Single vendor accountability
- Reduced training and IT costs
- Integration = situational awareness
- Fusion = intelligent data processing
- Centralized device management
- Common security infrastructure



Senstar customers benefit from world-class hardware and software, including open interfaces and platforms, while avoiding risks and complexity

SENSTAR

ELECTRICAL UTILITY INFRASTRUCTURE



Key Points

- Security technology supports the key physical security elements of Deter, Detect, Delay, Assess, Communicate, and Respond
- Multiple technologies can be used together to improve capabilities
- Integrated solutions improve event assessment and response capabilities
- Senstar's product range and relevant industry experience make us a uniquely capable partner in securing electrical infrastructure

