



Network Manager Suite

Powerful IP-based alarm reporting for Senstar sensors

Description – Senstar’s perimeter intrusion detection systems (PIDS) including OmniTrax®, XField®, µltraWave™ and FlexPS™ have an integrated sensor networking capability that provides a two-way communication channel between sensors and the control room. The Network Manager software provides a common interface through which third party head-end security management systems (SMS) perform communication to the sensors.

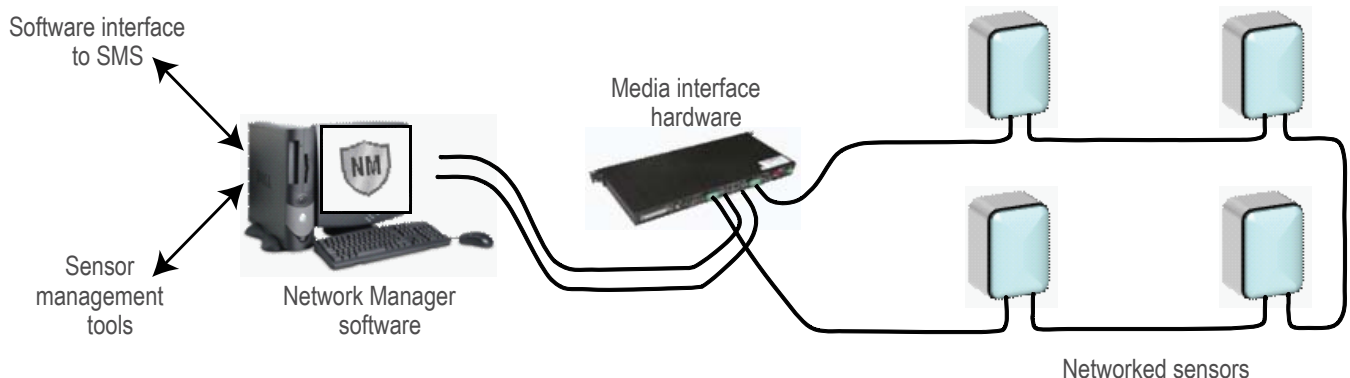
Application – The Network Manager (NM) is a Windows®-based software package that can reside on the same PC as the SMS (Security Management System) or on a dedicated PC. The physical connection of the NM to the networked sensors is through media converter hardware that is installed in the security system control room environment and connects to the networked outdoor sensors.

Features

- Common software interface to SMS for all Senstar networked sensors - including OmniTrax, XField, Intelli-FLEX™, IntelliFIBER™, FPS, FlexPS, MPS-4100, µltraWave™
- Supports remote connection to Senstar’s standard sensor configuration software tool, the UCM (Universal Configuration Module)
- Sensor management tools - Plot tool, Status tool, Event Log tool - provide installer / maintainer with centralized system monitoring and configuration capabilities
- Optional redundant configuration for critical applications
- Software Development Kit (SDK) with complete API documentation, test software and network manager simulator
- Microsoft Windows® compatible

Network Benefits

- Integrated sensor network reduces system installation and maintenance costs
- Allows for centralized sensor configuration and trouble-shooting
- Enables control of auxiliary perimeter security equipment



Basic sensor network elements

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Sensor networking

Senstar's sensors communicate alarm, status and configuration information to and from a centralized control location using an integral networking capability. For Senstar's latest-generation sensors including OmniTrax, XField, FlexPS and μ ltraWave, the primary network type is Senstar's Silver Network. Silver Network uses a loop topology with separate Transmit (Tx) and Receive (Rx) point-to-point links between each sensor or other connected Silver Network compatible equipment. The Silver Network is designed to be polled from both ends of the communications loop, thus providing redundant data paths to the field equipment. Point-to-point links can be EIA-422, single-mode or multi-mode fiber or in the case of OmniTrax, over the sensor cables themselves. The data signal is regenerated at each node in the loop to ensure signal integrity and reliable data transmission around long perimeters. The Silver Network includes error detection with automatic retries to provide a reliable and high-integrity communications path.

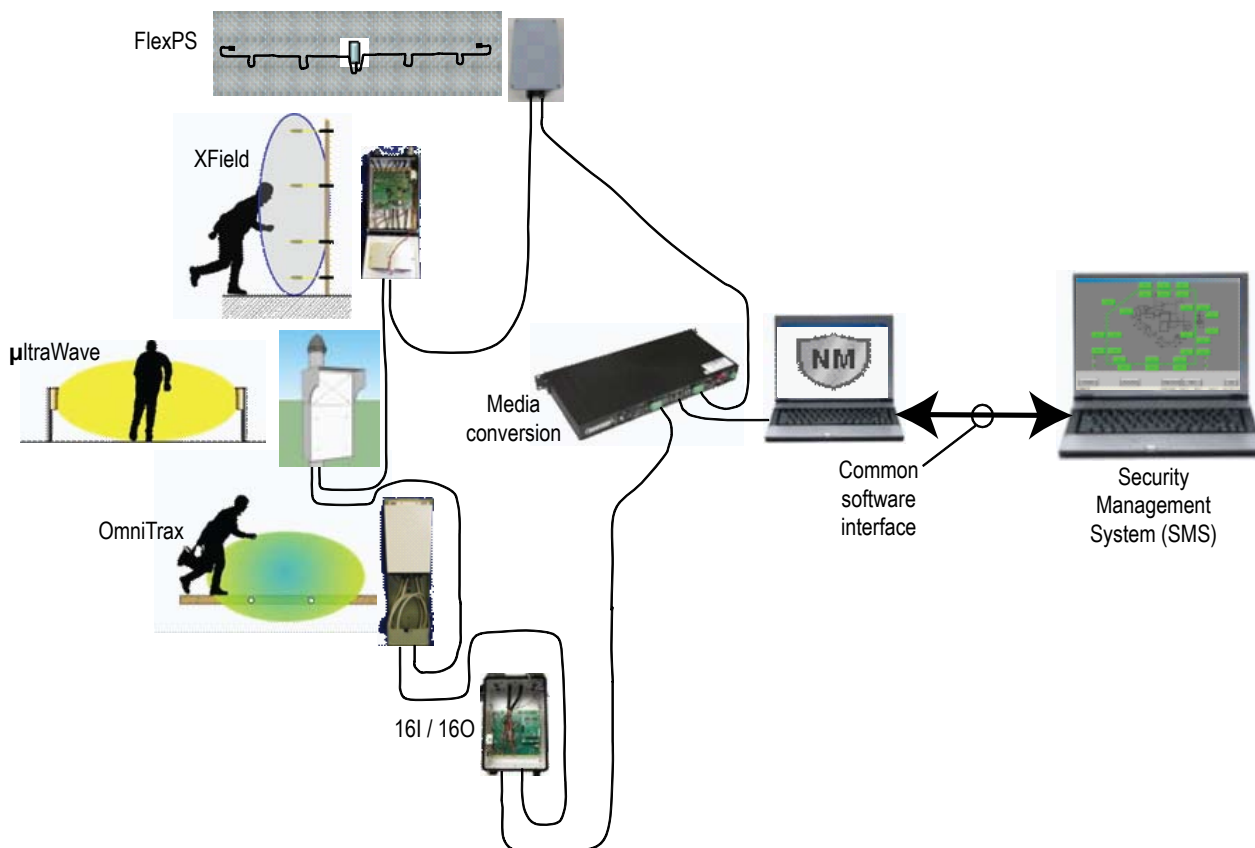
The Silver Network allows a wealth of information to be communicated including:

- Sensor intrusion alarm status
- Sensor operational status including alarm location, device tamper status and diagnostic alarms (internal trouble conditions)
- Sensor configuration data such as thresholds, gain settings, zone lengths, etc.
- Alarm and supervision status of auxiliary dry-contact input
- Control messages to set the state of auxiliary relay output
- Sensor response data to support calibration and troubleshooting activities
- Sensor firmware updates (FlexPS and μ ltraWave)
- Sensor event log - sensors maintain an internal event log that can be accessed via Silver Network
- Other sensor diagnostic information such as operating temperature, input voltage, battery voltage and power consumption
- Commands to initiate sensor self-text (device dependent)

Network Manager software

The Network Manager software initiates and controls all communications over the sensor network and provides the interface for sensor alarm reporting and system management. The Network Manager includes the following:

- Public Applications Programming Interface (API) through which SMS software receives alarm and other operational status information from networked sensors
- Proprietary API that Senstar's UCM software uses to enable configuration and calibration to be done over the sensor network
- Network Manager system management tools: Plot tool, Event Log tool and Status tool



Silver Network multi-sensor compatibility

Network Manager API

The Network Manager API gives the head-end / SMS access to all sensor data including:

- Intrusion alarm status
- Tamper status
- Communications status
- Diagnostic alarm status
- Dry contact input status
- Control of relay outputs

In addition the SMS / head-end can initiate a sensor self-test through the Network Manager API.

Communications between the Network Manager and the SMS is accomplished via TCP/IP on a client-server basis. In normal operation, status changes are sent unsolicited to the SMS application (the client). The Network Manager API also includes query commands so that when required, the SMS can request complete operational status of the networked sensors. API-compatible versions of the Network Manager exist for the various Senstar sensor networks – Silver Network, Crossfire, Sennet and MX.

Providing architectural flexibility, the Network Manager and SMS can be co-hosted on the same computer or run on separate computers that communicate through fixed IP addresses. To protect access to its data, the Network Manager only responds to requests from IP addresses that are specified at set-up time – two IP addresses can be specified. To accommodate installations with a large number of sensors and / or multiple types of sensor networks, up to 10 Network Managers can run on one PC.

Network Manager redundancy

To support the requirement for high system availability, the Network Manager can run in a redundant configuration whereby two Network Manager instances run on two separate computers. One Network Manager is active, the other in standby and a heart-beat protocol operates between the two so that the standby Network Manager takes over in the event the active Network Manager fails.

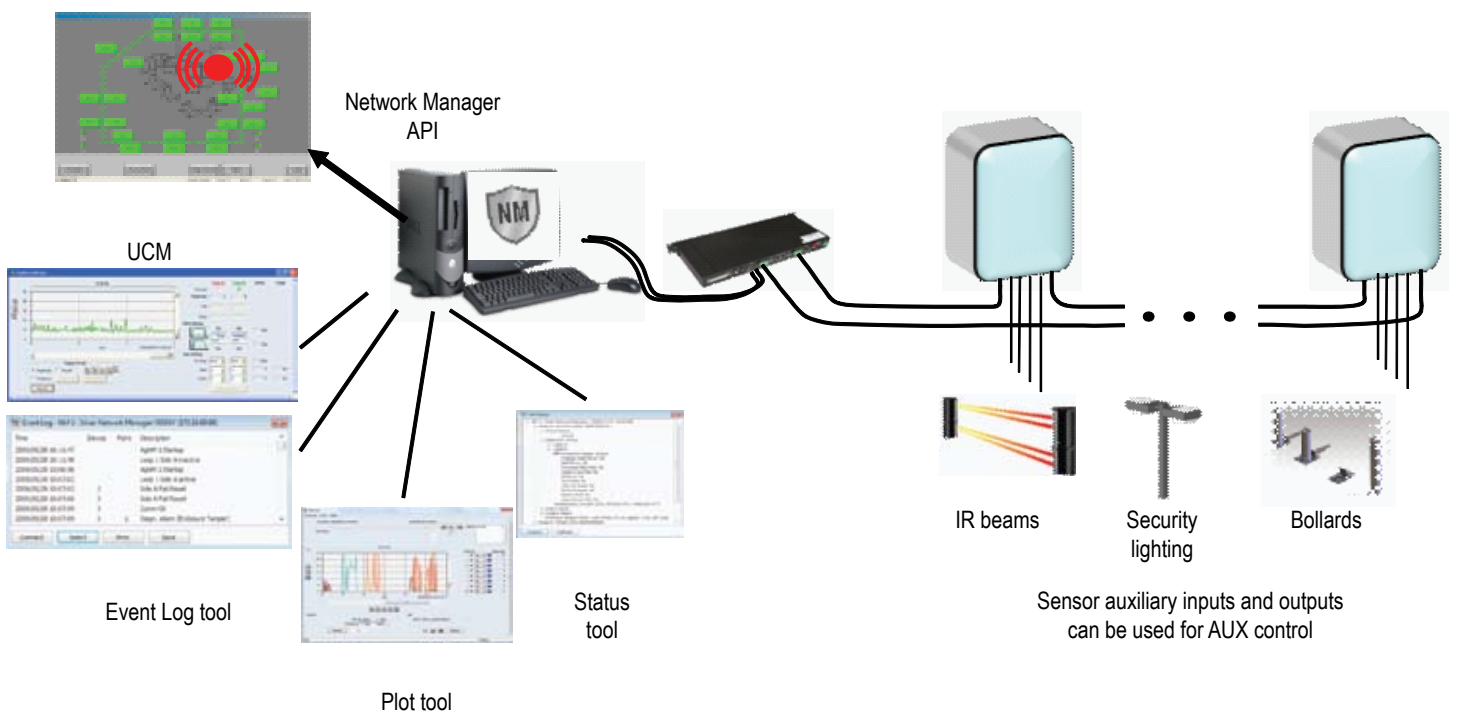
Network Manager Software Development Kit (SDK)

Senstar provides a complete SDK to enable 3rd party SMS providers to integrate the Network Manager into their SMS. The SDK consists of:

- Full documentation on the Network Manager API
- Sample code that interfaces to the Network Manager API, written in C++ for Microsoft Foundation Classes (MFC) framework
- A Network Manager simulator that simulates the behavior of a Network Manager connected to any array of sensors

Software developers have two choices for interfacing to the Network Manager:

- Establish the TCP/IP communication directly and process raw Network Manager messages
- Use the provided Windows® MFC DLL which in some cases provides more convenient access to the NMI TCP/IP messages



Network Manager Utilities

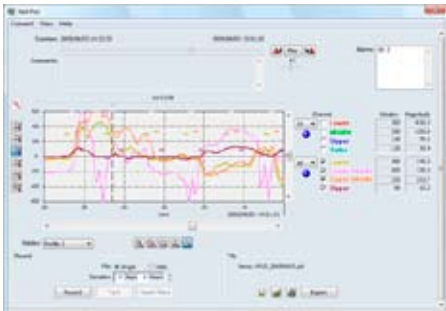
Technical Specifications

Network Manager sensor management tools

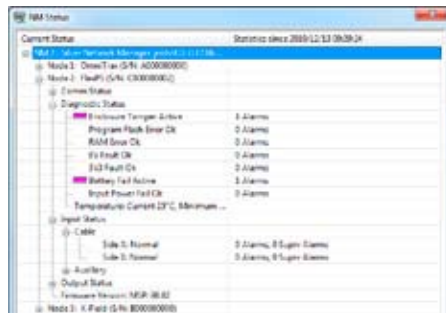
The Sensor Management tools provide the sensor installer/maintainer with the ability to monitor and configure the operation of all networked sensors from one centralized location. All tools connect to the Network Manager via IP so they can be used on a PC that is separate from the one running the Network Manager – a time saver when access to the computer running the Network Manager is restricted or inconvenient.

Sensor Management tools include:

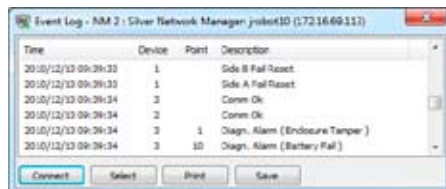
- Plot tool - records and displays real-time sensor response to intrusions / activity for up to 8 zones



- Status tool - shows complete running status of all sensors on the network



- Event Log tool - Provides remote access to the Network Manager log files / information on daily events



Network interface hardware

The primary network interface hardware for the Silver Network is the Silver Network Interface Unit (SNIU). The SNIU is a 19 inch rack-mount unit and connects to the Silver Network to provide standard computer interfaces for connection to the PC running the Network Manager.

Silver Network interfaces provided:

- Two each EIA-422 and fiber optic connections (either multi-mode or single-mode), one connection for each end of the sensor network loop
- Integrated lightning protection provided on EIA-422 lines

PC interfaces provided:

- Two each EIA-232, USB and Ethernet, a matching connection is required for each connection to the Silver Network loop

The SNIU includes a pass-through with fail-over mode that supports redundant operations in conjunction with the redundancy features of the Network Manager.

Sensor network communications cards

Sensor communication on the Silver Network is enabled through the addition of a communications card to the sensor processor. The following Silver Network communication cards are available:

- Generation 1 cards are compatible with OmniTrax, XField and the 16I/16O input / output transponder
- Generation 2 cards are compatible with FlexPS and ultraWave

| PART | NETWORK MANAGER SOFTWARE |
|----------|---|
| 00FG0200 | Network Manager Suite on CD for Windows® XP Pro and Windows 7. Includes Silver, Sennet, Crossfire, and MX Network Managers and one USB security key. Also includes Status, Event Log and Plot tools and Network Manager Simulator |
| PART | SILVER NETWORK INTERFACE UNIT (SNIU) |
| 00EM0200 | Silver Network Interface Unit (SNIU), RS-422 and multi-mode fiber-optic Silver Network connections |
| 00EM0201 | Silver Network Interface Unit (SNIU), RS-422 and single-mode fiber-optic Silver Network connections |
| PART | GEN 1 COMMUNICATION CARDS |
| 00BA0301 | Gen 1 Silver Network comm card providing multi-mode fiber optic connections |
| 00BA0302 | Gen 1 Silver Network comm card providing EIA-422 connections |
| 00BA0303 | Gen 1 Silver Network comm card providing single-mode fiber optic connections |
| 00BA0304 | Gen 1 Silver Network comm card providing one multi-mode fiber optic and one EIA-422 connection |
| 00BA0305 | Gen 1 Silver Network comm card providing one single-mode fiber optic and one EIA-422 connection |
| PART | GEN 2 COMMUNICATION CARDS |
| 00BA1801 | Gen 2 Silver Network comm card providing multi-mode fiber optic connections |
| 00BA1802 | Gen 2 Silver Network comm card providing EIA-422 connections |
| 00BA1803 | Gen 2 Silver Network comm card providing single-mode fiber optic connections |
| 00BA1804 | Gen 2 Silver Network comm card providing one multi-mode fiber optic and one EIA-422 connection |
| 00BA1805 | Gen 2 Silver Network comm card providing one single-mode fiber optic and one EIA-422 connection |
| PART | SILVER NETWORK REPEATER |
| 00EM0301 | Silver Network repeater module - multi-mode fiber optic to multi-mode fiber optic |
| 00EM0302 | Silver Network repeater module - EIA-422 to EIA-422 |
| 00EM0303 | Silver Network repeater module - multi-mode fiber optic to EIA-422 |

Specifications are subject to change without prior notice.



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