SENTINEL FOCUS^NX
Perimeter Intrusion Detection System

At a Glance

NIS' SENTINEL FOCUS^NX Perimeter Intrusion Detection System (PIDS) secures critical infrastructure and facilities such as:

- Military facilities
- Airports and seaports
- Prisons, jails, and correctional facilities
- Data centers
- Nuclear, electric, wind, and solar power plants and infrastructure
- Transportation infrastructure
- Corporate campuses
- Municipal/public water resources
- Diplomatic outposts
- National borders

See our Solutions Landscape for details on these applications.
https://qrco.de/NIS-SENTINEL

Overview

A critical task for any government, agency or business is the protection of its people, property, and other assets. Whether it is physical intrusions at a national border, military installation, or private property, NIS' SENTINEL FOCUS^NX can detect physical intrusions and disturbances along land borders, property boundaries, and facility perimeters; above ground, underground, and under water.

Fiber-optic sensing and machine learning-based artificial intelligence provide covert, instant, and simultaneous classification and location of multiple physical intrusions or disturbances. Underground or on fences, NIS' SENTINEL FOCUS^NX detects a variety of activities at distances such as:

Immune to electromagnetic interference and with no electrical power required in the field, it actively monitors near and remote areas, delivering reliability and results, including:

Intrusion	Range
Human Walking	Up to 10 m/33 ft.
Human Running	Up to 15 m/50 ft.
Human Crawling	Up to 1 m/3 ft.
Fence climbing, cutting, lifting	Yes
Light vehicle moving	Up to 15 m/50 ft.
Heavy vehicle moving	Up t o 30 m/100 ft.
Digging	Up to 30 m/100 ft.
Tunneling	Up to 30 m/100 ft.
Low flying aircraft	Yes

Distance	Up to 160 km (100 mi)
Location Accuracy	Up to ±1 m (±3 ft.)
Cut Immunity	Yes
Bidirectional	Yes
Probability of Detection*	High
Nuisance Alarm Rate*	Low
False Alarm Rate	Low
Total Cost of Ownership	Low

*Optimized using machine learning based Artificial Intelligence

NIS' SENTINEL FOCUS^NX performance is invariant to seasons and remains consistent in a wide-range of field conditions such as strong wind, heavy rain and snow, dense fog, lightning and explosive atmospheres. Ability to withstand these elements provides a significant reduction of maintenance and security resources for low total cost of ownership.
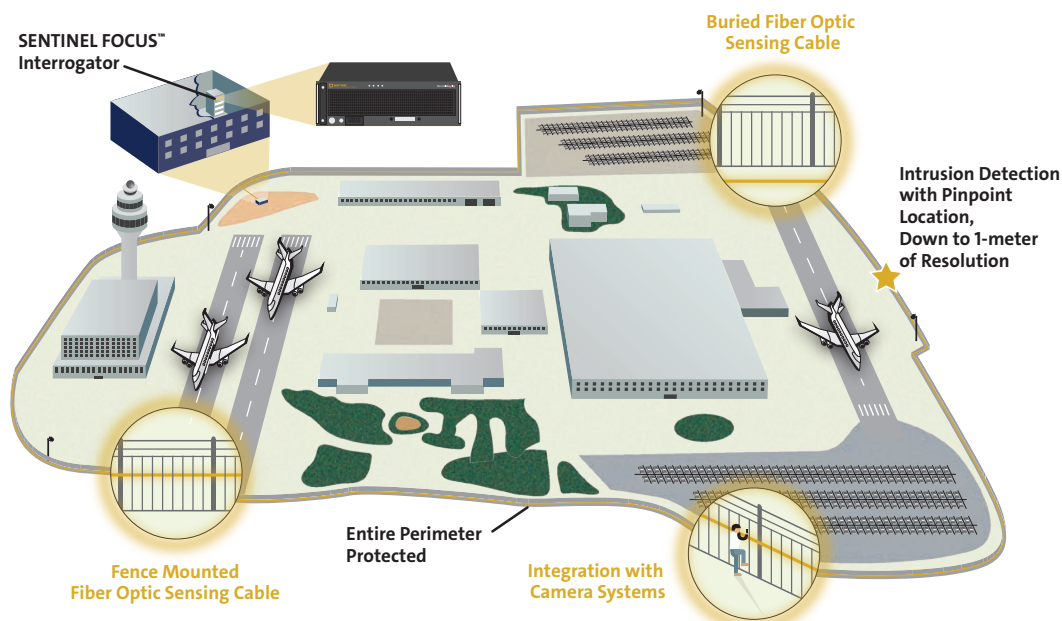
NIS

Solution

The SENTINEL FOCUS^{NX} Perimeter Intrusion Detection System is a state-of-the-art long-range fiber optic sensor that utilizes Distributed Acoustic Sensing (DAS) to detect and pinpoint the exact location of intrusions on a perimeter. It has proven its capabilities by protecting highly classified U.S. Government facilities and other critical infrastructure sites. A centrally located SENTINEL FOCUS^{NX} sends and receives light into and from optical fibers that are covertly buried and/or fence-mounted or wall-mounted along borders and facility perimeters. When physical intrusions create vibrations that reach the optical fibers, the interrogator discerns changes in the light. Then, machine learning-based AI instantly and simultaneously classifies and locates the multiple physical intrusions.

User-Friendly and Customizable Software and Integration

In real-time, a user-friendly and customizable graphical user interface displays a border and/or facility perimeter map, denotes the location of detected physical intrusions, and provides actionable data. Detection and alarms can be integrated into SENTINEL FOCUS^{NX} to immediately trigger silent or audible alarms and/or activate security resources—such as personnel, cameras, or drones in the field—which can prompt the intruder's retreat or lead to apprehension. Actionable data, such as date, time, location, and classification, can be stored locally or remotely for future reference and data analytics. Additionally, for a single SENTINEL FOCUS^{NX} and over the length of a single optical fiber, the software can be customized for multiple types of borders and facility perimeters that have a wide range of field conditions.

HARDWARE SPECIFICATIONS - 160 Kilometers / 100 Miles	
Optical Fiber Connection	LC/APC
Optical Fiber	2 standard single mode (0.2 db/km loss @ 1550 nm)
Data I/O & Communication	1000Base-T Ethernet (Gigabit)
Temperature (Operating)	0 to 45 °C (32 to 113 °F)
Temperature (Storage)	-40 to 70 °C (-40 to 158 °F)

Humidity (Operating)	20 to 95 % relative/no cond.
Humidity (Storage)	5 to 95 % relative/no cond.
Electrical power (input)	90 ~ 264 VAC
Electrical power (consumption)	Max 165W, Typ 60W
Size	2U, 19 in rack mountable

SENTINEL FOCUS™ Interrogator

Buried Fiber Optic Sensing Cable

Intrusion Detection with Pinpoint Location, Down to 1-meter of Resolution

Entire Perimeter Protected

Fence Mounted Fiber Optic Sensing Cable

Integration with Camera Systems

Customer Benefit

NIS' SENTINEL FOCUS^{NX} provides the best accuracy, highest probability of detection and lowest nuisance alarm rate over the longest distances and widest-range of field conditions. Being invariant to seasons, in concert with innate immunity to electromagnetic interference, and requiring no electrical power in the field, existing and/or previously non-securable borders and perimeters can be secured with unmatched reliability and significant reduction of maintenance and security resources for a low total cost of ownership.