



A smart approach to securing facilities and property

# Intelligent Perimeter Intrusion Detection System (IPIDS)

## AT A GLANCE

NEC's Intelligent Perimeter Intrusion Detection System (IPIDS) secures:

Airfields

Buildings and warehouses

Runways

Data centers

Utility operations

Restricted areas

Transportation infrastructure

Critical assets



## THE FLIGHT PLAN

The aviation industry and its partner agencies must protect its people, property, and other assets. Whether it is perimeter security at an airport, airline operations or affiliate properties, **NEC's Intelligent Perimeter Intrusion Detection System (IPIDS)** can detect anomalies, and abnormal events along land borders, property boundaries, and facility perimeters, above ground, underground, and underwater.

Fiber-optic sensing and machine learning-based artificial intelligence (AI) provide reliable, instant, and simultaneous classification and location of physical intrusions or disturbances. Whether it's underground or on fences, NEC IPIDS can detect various activities from a distance, such as someone walking, climbing a fence, digging or tunneling, screaming, and even gunshots or vehicle movement. Our AI can classify activity of interest while reducing nuisance alarms of untargeted activity.

Fiber optic sensing is immune to electromagnetic interference and with no power required in the field, NEC's IPIDS solution actively monitors near and remote areas, delivering reliability and results, including:



Distance	Up to 100 km (62 mi)
Location	Accuracy Up to $\pm 1$ m ( $\pm 3$ ft.)
Cut Immunity	Yes
Bidirectional	Yes
Probability of Detection*	High
Nuisance Alarm Rate*	Low
False Alarm Rate	Low
<b>Total Cost of Ownership</b>	<b>Low</b>

\*Optimized using machine learning based Artificial Intelligence

### No Weather Delays

NEC's IPIDS 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.



## THE SOLUTION

NEC's Intelligent Perimeter Intrusion Detection System combines NEC's world-leading expertise in transoceanic optical fiber communication with machine learning-based artificial intelligence. A centrally located INTERROGATOR sends and receives light into and from optical fibers that are covertly buried and/or fence-mounted or wall-mounted along boundaries and facility perimeters. When physical intrusions create vibrations that reach the optical fibers, the interrogator discerns changes in the light. Then the machine learning-based AI instantly and simultaneously classifies and locates the physical intrusions.



## THE SOFTWARE

In real-time, a user-friendly and customizable graphical user interface displays a boundary and/or facility perimeter map, denotes the location of detected physical intrusions, and provides actionable data. Detection and alarms can be integrated into NEC IPIDS 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 INTERROGATOR 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.

## THE RECAP

- NEC's IPIDS provides an outstanding alternative to expensive and high maintenance video surveillance systems.
- Immune to electromagnetic interference, with no electrical power required in the field.
- Invariant to seasons, providing a significant reduction of maintenance and security resources for a low total cost of ownership.
- Existing and/or previously non-securable borders and perimeters can be secured with unmatched reliability.
- NEC is a 124-year-old company committed to its customers, offering installation, customer support, warranty, training, and onsite support.

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