



Perimeter Intrusion Detection System (PIDS)

**Trusted to protect critical perimeters,
borders and secure high-value assets**

ONYX™ nano

Advanced Perimeter Intrusion Detection System (PIDS) with Real-Time Gapless Monitoring and Threat Detection



10km/6.2 miles



Trusted Security Partner

Sintela ONYX™ *nano* is the next generation of DAS. Used with optical fiber in cables deployed around a perimeter; it provides gapless, persistent, resilient and highly cost-effective monitoring with flexible configuration and the capability to cue other sensors initiating a rapid security response.

Better Performance, Reduced Costs

ONYX™ *nano* gathers vibro-acoustic data continuously from intruders via sensing fibers in a single core optical cable buried underground, mounted on a fence or wall. Analysing the dense spatial and temporal data in real-time on the edge, it provides actionable information accurately detecting unauthorized personnel, fence tampering, vehicle movement, tunnelling, even gun shots, significantly reducing nuisance call outs and operational costs.

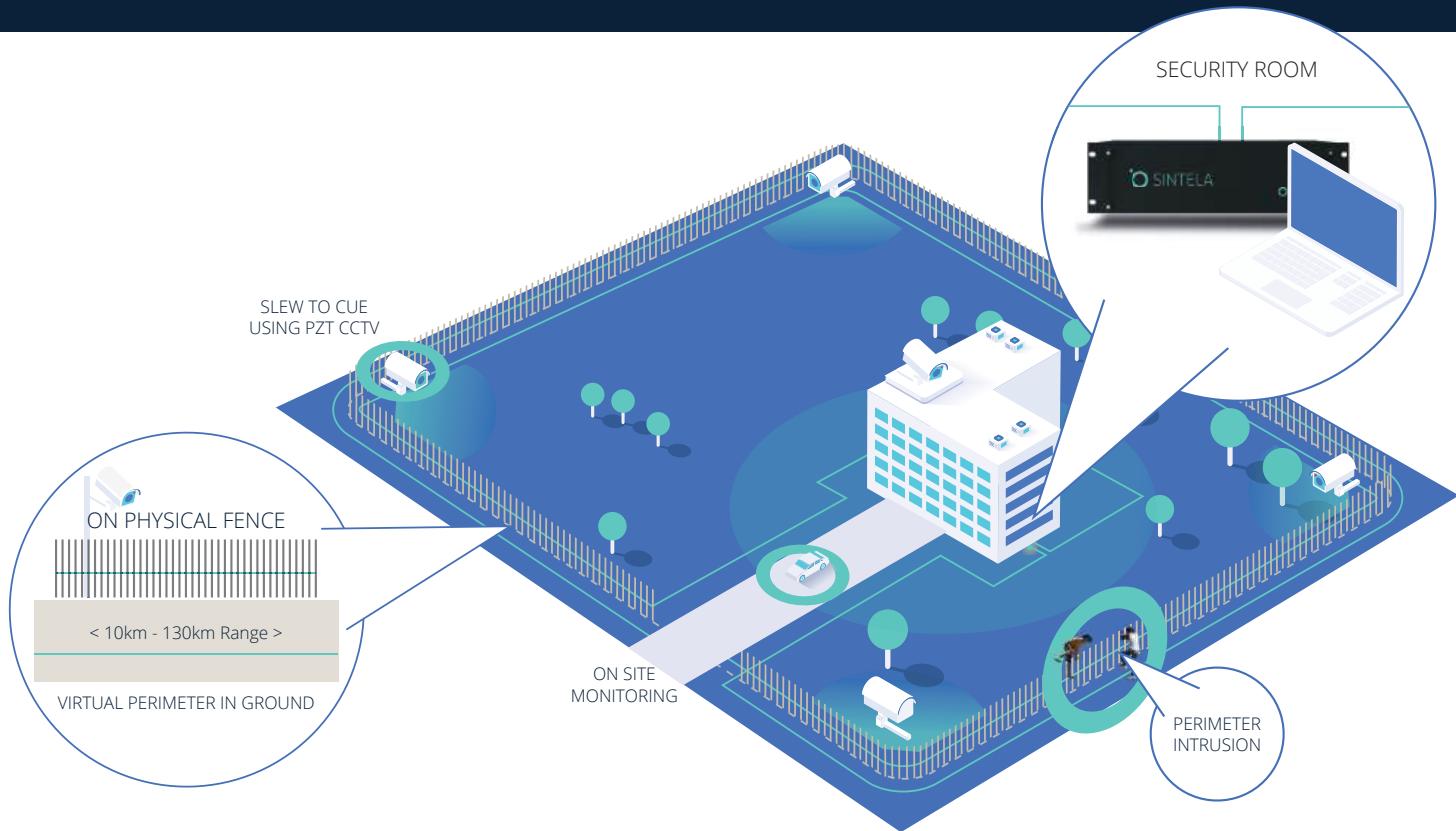
Our intuitive, easy to use perimeter DAS software can run instantly from any modern web browser without the need for specialist terminal hardware.



ONYX™ *nano* Sensing Unit

- 1x >10 km (6.2 miles) operational range
- Quantitative 'phase-based' measurements
- Industry leading sensitivity on standard fiber
- Integrated processor
- Automated fiber characterization and optical configuration
- Fully controllable over a remote connection
- Small form factor
Size: 19-inch 3U Enclosure
Weight: 37 lbs | 17 kg
- Low power operation
< 100 Watts
- Removable storage
Up to 16 TBytes on 2x SSDs
- Wide operating temperature range
23 °F -122 °F | -5 °C - 50 °C
- Minimal maintenance
Sealed fanless design
- Safe to operate
Class I laser operation
- Cyber Security
Center for Internet Security (CIS)
Benchmark compliant

Perimeter Intrusion Detection of Virtual and Physical Fences



Bespoke Custom Solution

- Sintela's Linear Ground Detection System (LGDS) is commissioned on multiple international borders and has been tailored for perimeter security
- Multiple units available to cover either 10km/6.2 miles or up to 130km/80.8 miles
- Fiber deployable in ground on fence or wall
- Multiple fiber deployments supported from one unit e.g. buried and fence mounted
- Fixed or virtual fence
- Smart zones
- Entirely covert and tamper proof
- Ease to install and cost-effective

Next-Generation System Performance

AI-powered detection of:

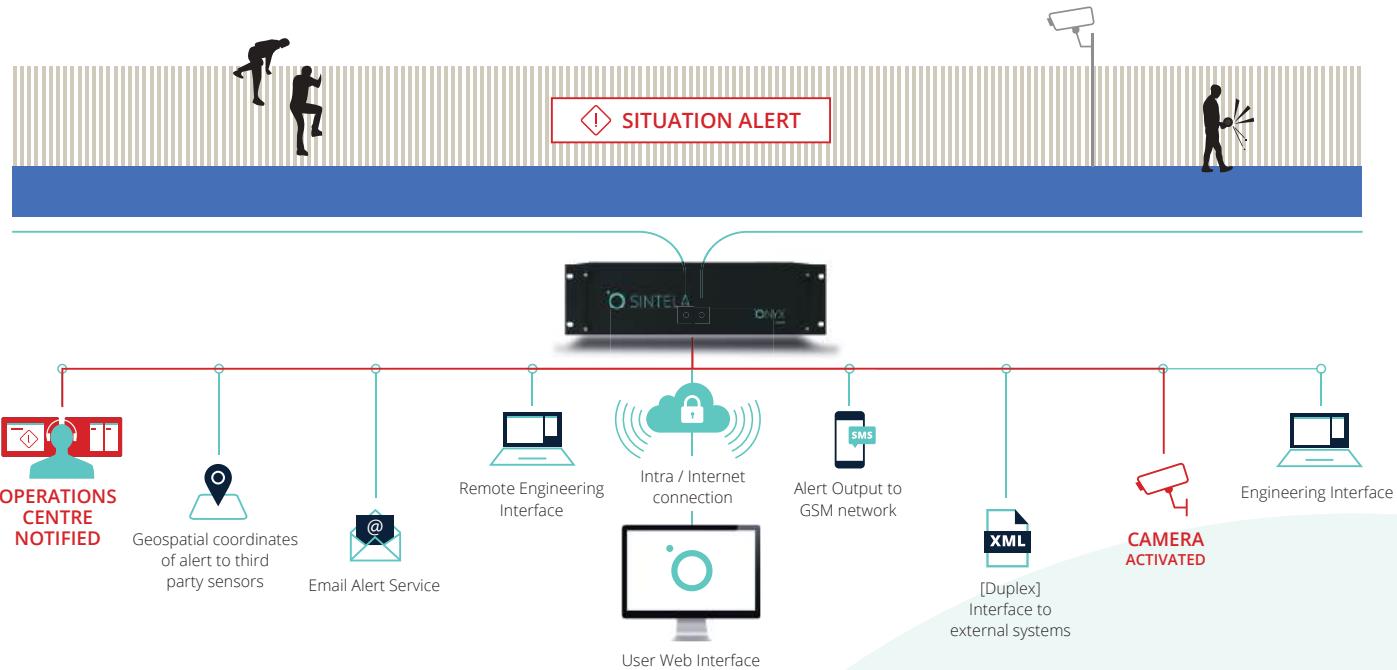
- ✓ Unauthorised personnel movement
- ✓ Perimeter climbing and tampering
- ✓ Perimeter cutting and forced entry
- ✓ Digging / tunnelling under perimeter
- ✓ Vehicle movement / curb strike
- ✓ Entry point monitoring
- ✓ Unaffected by low visibility and inclement weather

Advanced Performance and Intuitive User Interface

- Simple, modern, comprehensive UI
- Event reporting and analytics to aid operators
- Continual improvement of performance using the latest machine learning and processing techniques

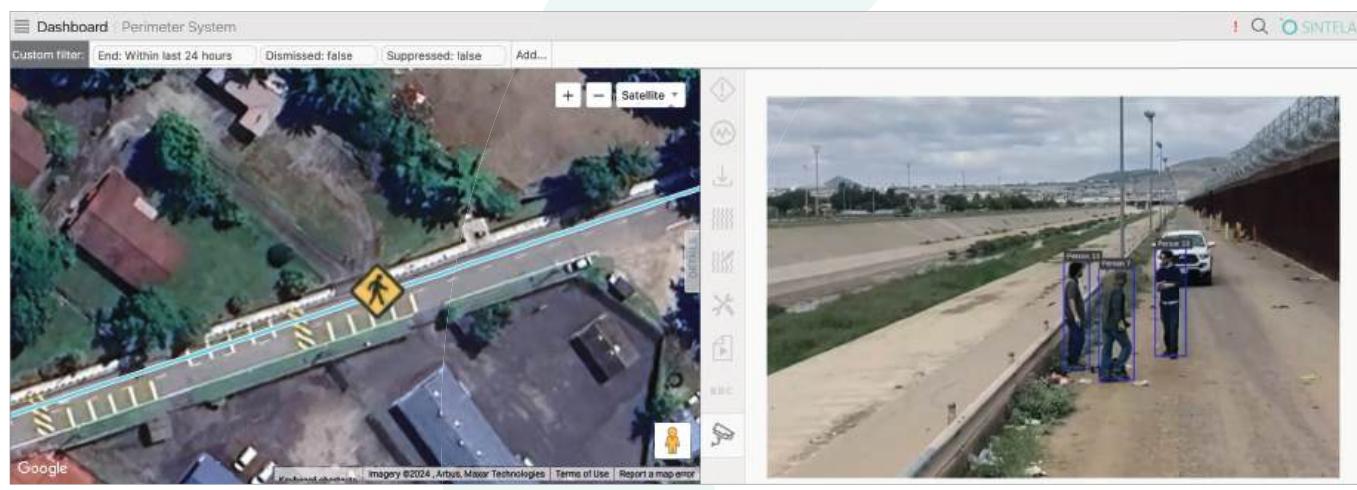
The Complete Solution for Perimeter Intrusion Detection

ONYX™ *nano* fiber-optic DAS system is an Open Data Architecture



Seamless Integration Capabilities

- Automated camera slewing and control – ONVIF and RSTP compliant
- SMS, Email and Mobile UI alerts
- Dry Contact, MODBUS and SCADA support
- Bosch Panel Integration
- Integration with multiple Video Management Software (VMS) packages
- Open format data architecture for bespoke integration including radar devices



Sintela UI with built-in camera integration and analytics

ONYX™ Case Study

CLIENT: CLASSIFIED HIGH-VALUE UTILITIES COMPANY

PROJECT TYPE: COMMERCIAL | **PRIME CONTRACTOR:** SINTEL A

The Problem

The client required a new Perimeter Intrusion Detection System (PIDS) to replace their old detection system, which suffered from performance issues such as a very high false alert rate during inclement weather conditions. The solution needed to utilize their existing sensing fiber, operate in all weather conditions and detect fence climbing and fiber break events. The system also needed to be integrated with their existing dry contact interface to trigger their CCTV cameras and perimeter floodlights.

System Installation

System calibration was complete within 1 working day, which included:

- Hardware installation
- Sensing fiber geo-referencing
- Calibration of perimeter detection zones
- Implementation and tuning of AI detection models
- Setup of dry contact integration
- Testing of system capabilities

Flagship Performance

The ONYX™ system went beyond the customer's base requirements, and was calibrated to automatically detect and classify:

- Fence climbing / intrusions
- Angle grinder cutting (chosen due to fence layout)
- Vehicle movement
- Entry point gate operation
- Fiber break

RESULTS

100% detection and alerting of personnel tampering or climbing the perimeter fence structure

99% reduction in nuisance and false alarms
- verified during storms and a high-background noise environment



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