The Fiber SenSys Perimeter Intrusion Detection System From JM Fiber Optics!
Introduction

- The rising demand for advanced perimeter security detection systems against intrusion at airports, harbors, power substations, water treatment plants, military bases and other government facilities is spearheading the way for fiber optic based perimeter security systems.

- Fiber optic intrusion detection systems can detect any attempt to cut, lift, crawl under, climb over a fence or detected area.

- Fiber optic based perimeter security systems provide a much better solution than copper based systems, motion detectors or simple video camera’s.
Copper Versus Optical Fiber

- Fiber optic technology offers immunity from lightning problems or from high EMI/RFI environmental conditions.
- Copper-based sensor system can cause a problem when a high-powered directional RF transmitter is very near to the system.
- Fiber optic cable is lightweight and can be easily installed in most environments.
- Fiber optic cable allows great distance of signal transmission without needing to be repeated.
- Fiber optic sensor cable is sensitive to vibration and pressure.
Perimeter Considerations

To begin to determine what type of perimeter system may work best for a given situation, there are a number of aspects that are essential to consider. These are ........

- Landscape and topographical features
- Typical climatic conditions
- General environment
- Whether or not there is a physical barrier
- Personnel on site
- Reporting method
- Integration with other types of equipment
Risk of Nuisance Alarms

♦ When putting a sensor on the boundary or perimeter, the risk of nuisance alarms increases.

♦ This is related to how much activity exists on the outside of the perimeter (human and wildlife) as well as factors such as trees and other plant growth.

♦ If the sensor is placed on a boundary structure, such as a fence, the integrity of the structure itself becomes a major issue.

♦ There is absolutely no single type of technology that will fit every application, but a fiber optic perimeter system makes the most sense.
Not All Fiber Optic Intrusion Detection Systems Are Alike!
“Fiber SenSys” Versus a “Fiber Fence”

♦ Fiber SenSys uses Frequency-Detection technology, not an OTDR, which only measures loss in a system from a tug or break in the fiber*.

♦ With the Fiber Sensys system, the fiber optic cable can be directly buried with full detection capability when the perimeter is not fenced.

♦ Fiber SenSys has a lower cost of ownership.

♦ Fiber SenSys easily interfaces with existing security systems and requires little operator training.

♦ A Fiber SenSys type system can save as much as four man-years of labor versus two-man years with a fiber fence system*

* Source – On Guard Newspaper August 04, 2005
Fiber SenSys Versus an OTDR System

**Fiber Sensys**
- Close proximity or light touch will trigger alarm
- Easy to install
- Fiber cable can be mounted on or near the fence
- Does not require fiber meshing
- Approximately $6,000 per mile, including fiber
- Does not require an expensive controller

**OTDR Systems**
- OTDR’s only estimates loss
- Heavy strain on fence or cut fiber to set off an alarm
- Mesh installation needed to cover fence vertically
- Difficult Installation on existing fence
- Approximately $10,000 per mile + cost of fiber
- Requires an expensive control center unit
Additional Advantages of a Fiber SenSys Perimeter Intrusion Detection System

- Designed for any intrusion detection risk level
- Virtually no false/nuisance alarms (FAR/NAR)
- Very high probability of detection (PD)
- Low vulnerability to defeat (VD)
- Easy installation and migration with existing equipment
- User friendly *SpectraView* monitoring software
- Simple expandability
Benefits of an Alarmed PDS

- Certified / meets PDS requirements
- Inexpensive
- Eliminates Need for Encryption (expensive, slow, key-based)
- Can be used on long runs
- Eliminates inspection requirement
- Immediate intrusion detection
- Configurable Parameters (eliminates nuisance alarms)
How the Fiber Optic Sensor Unit Works & System Overview
Fiber optic sensing cable is *glass*.

- Inner conductor, called the *core*, conducts light
- If the fiber optic cable is disturbed, the pattern of conducted light changes.
- Sensitivity to motion, vibration, or pressure
- Laser light from the APU transmits through the cable
- The system detects shifts in the return light pattern
The sensing cable can be deployed along a fence or buried under sod or gravel.

- Intruders compromising these barriers are detected
System Overview

- Alarm System with Headend Option
- Sensor Cable immune to EMI, RFI, and lightning
- Detection Zones up to 5 km
- Interoperability with Alarm Panels
- Highly Scalable
- Highly-configurable control software
- Local or email alarm notification
The Alarm Processor Unit

The APU allows direct or remote mounting of the electronics away from the fiber-optic sensing zone.
APU Models Include:

• FD-208 Stand Alone Systems
• FD-208R Rack Mount Systems
The Fiber SenSys Solution

With our solution you can:

- Sustain virtually no false/nuisance alarms (FAR/NAR)
- Have a very high probability of detection (PD)
- Have low vulnerability to defeat (VD)
- Have all this without incurring major capital equipment costs!
Managing The Project
JM Fiber Optics has the capability of managing a complete fiber optic perimeter security system for you from start to finish. In the design stage we work closely with you to make sure we address all of your specific needs and concerns so that we can design your system to meet your current and future perimeter security concerns!

Our advanced, yet cost effective design will make it possible to have the kind of perimeter security protection you require without “breaking the bank”. We utilize the latest design tools and our RCDD certified engineers are well versed on all the design standards and criteria.
With over 13 years of OSP and ISP installation experience, we can handle all of the installation process for you by using our ETA® technicians and installers or simply oversee and certify work done by the contractors of your choice. Either way, you will have the comfort of knowing that the installation was done right the first time!

JM Fiber Optics is a licensed State of California contractor with extensive experience with Singlemode and Multi-mode fiber optic infrastructure cabling, connector termination, fusion splicing, testing, trouble shooting and maintenance. Our personnel adhere to the latest TIA/EIA 568B installation standards and follow strict OSHA safety guidelines.
Maintenance

♦ Once your system is installed, we will be there to maintain and service it for you!

♦ Day or night, JM Fiber Optics service personnel will be available 24 hours a day, 7 days a week, 365 days a year if required!

♦ We will have personnel located locally to you, so our response time and associated service and maintenance costs will be significantly lower than other companies.
Conclusion

♦ This technology will enable you to have a truly reliable architecture that is immune to the effects of EMI, lightning, radio frequency transmissions, and magnetic fields.

♦ Our signal processors in each unit automatically compensates for disturbances from wind, giving you a system that provides maximum zone protection and virtually no nuisance.

♦ The Fiber SenSys fiber optic perimeter security system from JM Fiber Optics offers the technological breakthrough to deliver high quality, yet affordable remote detection like never before!
When you’re ready to take the next step, **JM Fiber Optics** will be there to ……

“CONNECT YOU TO THE FUTURE IN PERIMETER INTRUSION DETECTION SYSTEMS”
For more information, please contact:

Ken Rivera – (909) 628-3445

http://www.jmfiberoptics.com