

# Smart FENCE

The "smart" Electronic Perimeter Security Solution for your Vital Installations

## Overview

The SmartFENCE system is a technology-powered, cost-effective means of embedding intelligence into existing fences. It detects any attempted intrusion of the fence whether by climbing, cutting or opening of the structure, and provides visual and audible alarms against any such unauthorised ingress. This system may be applied to any type of fencing structure.

The system is designed keeping in mind three key performance characteristics, namely

- a high Probability of Detection
- a low False Alarm Ratio
- a low Vulnerability to Defeat

so as to provide the user with a complete "peace-of-mind" solution.

Made in conformance with exacting specifications, the SmartFENCE system is suitable for protection of

- Airports
- Defence Installations
- International Borders
- Industrial facilities



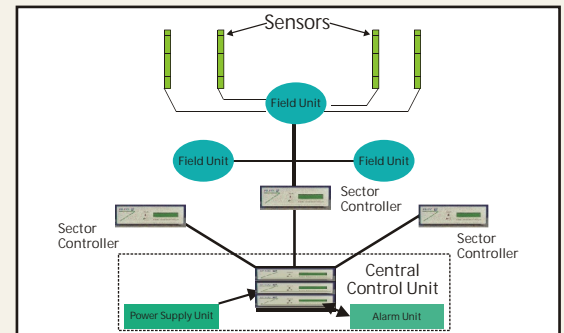
Our work in the field tells us there would be no "one-size-fits-all" solution in perimeter security. Hence a comprehensive site Need Analysis Survey is first conducted for the Area of Responsibility, and an optimal price-performance solution suggested to the client.

## Deployment

The main elements of the SmartFENCE include the following:

- Sensors
- Alarm processor (Field Unit/Sector Controller)
- Control Room / Alarm Monitoring Station
- Communication Backbone that connects these elements

The sensors are mounted on the fence to be secured. A number of such Sensors terminate into a Field Unit. Multiple Field Units, in turn, terminate into a Sector Controller, and a number of these Sector Controllers terminate into a Central Control Unit, thereby providing a single point of Control for the whole Area of Responsibility.



In its most basic form ( called the "SmartFENCE Core" ), the system would indicate an attempted intrusion by generating an alarm at the Central Control Unit. The level of sophistication can be enhanced by adding devices / sensors like illumination, video surveillance, geo-sensors, etc., at the front, and by putting at the Control Room a sophisticated Operations Management System, which can provide facility of perimeter security management of the complete Area of Responsibility on a digitized map of the area, besides generating MIS reports.

## System Components: " Core "

Any SmartFENCE solution deployed will have all the components of the "SmartFENCE Core", and none or some of the Optional Add-Ons. The following form the mandatory "SmartFENCE Core", which forms the backbone of your SmartFENCE solution :-

- Sensors : Piezoelectric/Infrared/Ultrasound/Laser/Magnetic, etc., housed in non-corrosive material
- Field unit : Which is the termination point for a number of Sensors, of mil-grade construction, weatherproof and waterproof, and normally buried underground
- Sector Controller : Which handles multiple field units. The Controller is Software-based with embedded- intelligence to identify nature and zone of intrusion
- Power Supply Unit : Powers the SmartFENCE system ; is required only at the Central Control Site
- Central Control Unit : Provides single point control of the whole Area of Responsibility. Has a LCD indicator giving indication about the Health status of each component, & the nature of intrusion whenever there is one. Has an Alarm Unit which provides distinct Audio & Visual Alarm and consists of High Intensity Siren and Strobe Light for audio & visual Indication. In the "SmartFENCE Advanced", the Central Control Unit will have a TV monitor for video surveillance and a computer-driven Operations Management System.



## System Components: "Advanced"

"SmartFENCE Advanced" =  
SmartFENCE Core" +  
(One or more) Add-on Options

Add one or more of the following Add-on options to the SmartFENCE Core already described, and you get the SmartFENCE Advanced Perimeter Security Solution :-

### i. Illumination:

The Illumination Controller automatically illuminates the zone from where intrusion has taken place. In addition, this can also act as a deterrent to the intruder. Since the area is illuminated only in case of intrusion, a significant reduction in electric costs can be achieved.



### ii. Video Surveillance:

Video Cameras can be installed along the fence and these can be controlled through the Field Units to have complete remote control. The monitor at the control station will automatically show the picture from the camera in the zone, which has indicated alarm. The camera can be remotely operated from control unit to pinpoint intruder. The camera output can also be recorded for training and analysis purposes.



### iii. In Ground Security Via Geo Sensors:

Addition of Geo Sensors will safeguard the Area of Responsibility against any underground intrusions.



### iv. Remote Alarm Monitoring Station:

It is possible to transfer the alarm information to some other locations such as

- Police control room
- Fire brigade
- Ambulance
- Location of QRTs



for better and faster response. This wireless system adds quick and automatic response capability to the system.

### v. Operations Management System (OMS)

A computer-driven OMS is useful for providing reports for better management of the system. A Digital map of area can be loaded on the PC and all FU's are displayed on screen. Also various markers can be deployed on screen corresponding to the location of FU's. Health check on FU's can be performed by clicking on the icon. Historical Reports can also be generated for feedback & training.



## BENEFITS :

### Your 24 x 7 Watchdog

- Provides a SINGLE point of control for the whole Area of Responsibility
- Reduces Your Physical Patrol Requirements significantly
- Evolutionary Solution - Grows with your needs
- A Cost Effective Solution both on Capital expenditure and on Operating Costs

## Important Features

- a Fully Customised Solution  
set up after a comprehensive site Need Analysis survey, it ensures optimal deployment of costly sensors
- Sensitivity Programmable from Central Unit  
It is possible to program the sensitivity in the field itself after deployment. This feature is helpful in eliminating/minimizing the false alarms which might occur due to strong winds or birds sitting on fences.
- Different audible alarms for different zones breached
- Liquid Crystal Display for better information to the user  
The central control unit has a Liquid Crystal Display for quick at-a-glance "information dissemination". This indicates the zone that has an incidence recorded.
- MicroController based and software driven system  
The entire system is based on a microcontroller chip and is embedded software driven, making it inherently flexible. Adding user desired features is easy and quick.
- Power is required only at the control site  
The solution recognizes that power might not be always easily available near the fence. The system design ensures that power to operate the SmartFENCE system is required at the Control Room level only, thereby reducing your infrastructure requirements greatly
- Health Check & BITE  
Controller Automatically Performs Health Check on All Field Units at power on and also at regular intervals. The BITE (Built in Test Equipment) facilitates fault Diagnosis and localization of fault to a sub unit. Each field unit can be checked from Control Unit itself and there is no need to visit the location of any field unit for diagnosis. The Measurements taken at the central site can be verified with standards. This helps to keep Off-Road Time to a minimum.

For further information, contact :

