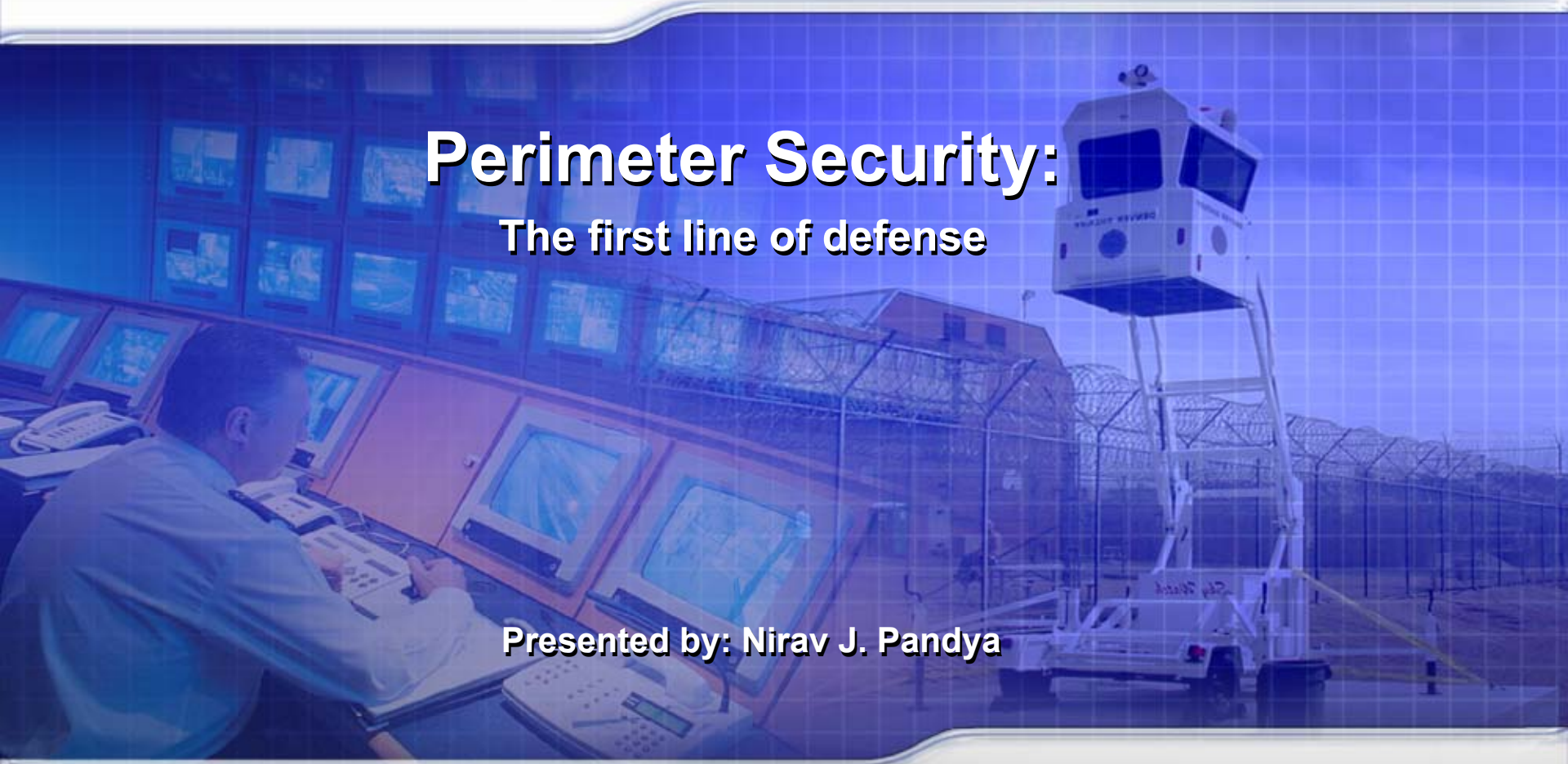


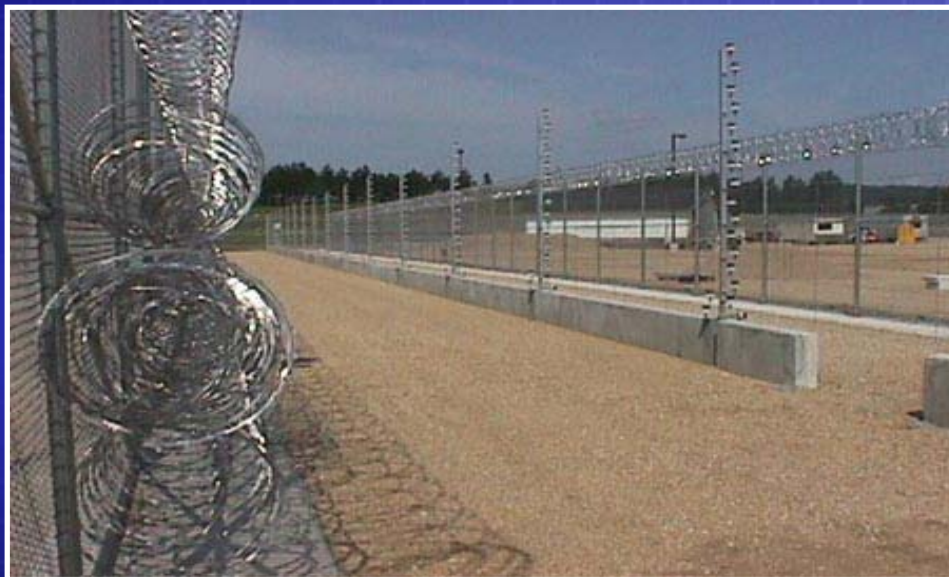
Perimeter Security:

The first line of defense

Presented by: Nirav J. Pandya



The First Line of Defense



Perimeter security is essentially the first line of defense in preventing a crisis. If your perimeter is strong and enforced properly, the chances of the interior being damaged are severely diminished. Many new technologies are available and can be fused into one solution that increases reliability, saves lives, and reduces operational expenses.

Conventional Technology

- **Armed Guards**
- **Perimeter Fencing**
- **Exterior Lighting**
- **CCD Cameras**
- **Digital Video Recorder**



Innovative Technology

- **Seismic, Acoustic & Chemical Sensors**
- **Thermal Imaging**
- **Ground Surveillance Radar**
- **Microwave Cameras**
- **Wireless communications**
- **Gamma Radiographic Detection System**
- **Automated Target Recognition**
- **IP Addressability**



Intelligent Technology

- **High tech, easy to use command and control centers**
- **Integration of multiple types of sensors (sensor fusion)**
- **More automation**
- **Reliability increases as operational expenses decrease**



CCTV Cameras

- **Inexpensive**
- **Widely deployed**
- **Color Image**
- **Zoom lens**



Thermal Imaging Cameras

CCD Image



Thermal Image



Image Overlay

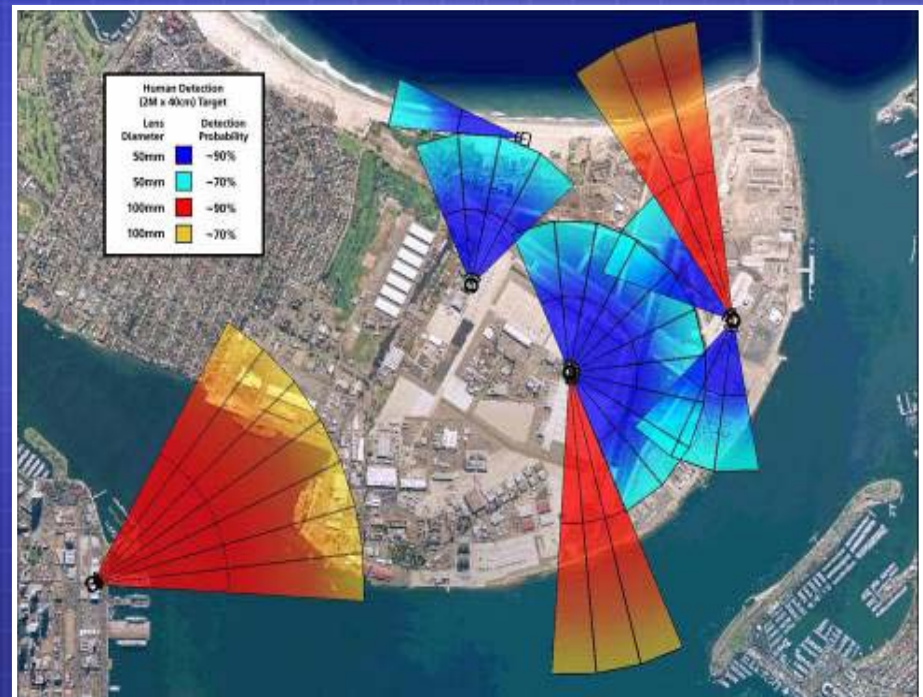


- Thermal imaging detects the heat that objects emit so they do not need any visible light to produce an image.
- They can “see” objects in total darkness and through smoke, haze and most types of fog



Video Motion Detection Software

- People or vehicles entering a restricted area
- Monitor objects left behind in a building or on a street corner
- People entering an area from the wrong direction
- Vehicles left unattended for an extended period of time



Secure Wireless Networks



- **Wireless mesh architecture**
- **Secure and reliable wireless connectivity**
- **Rapid deployment**

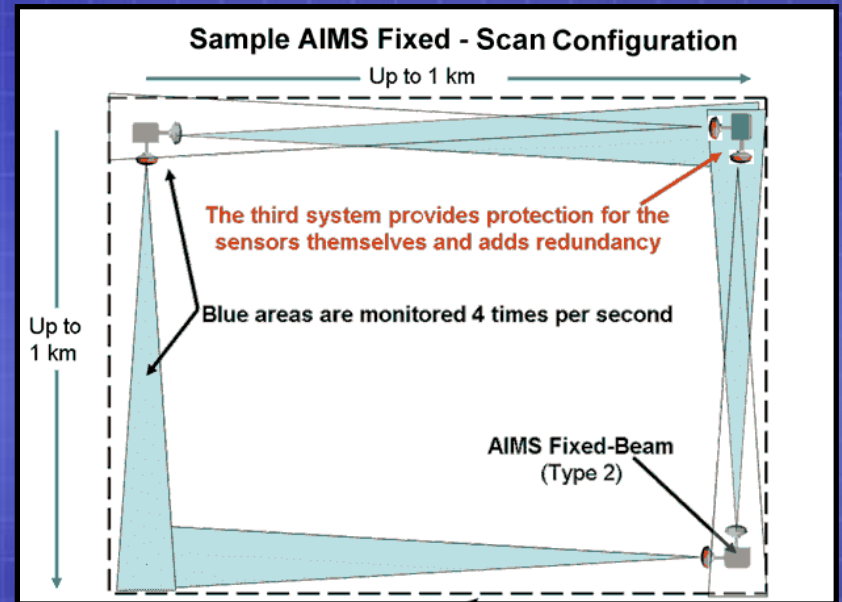
Wide coverage in RF-unfriendly environments

Microwave technology

- **Locates Intruder within 3 meters**
- **Intruder stands out from wind / rain**
- **Digital processing increases Pd**
- **Focused CCTV assessment**
- **Listen to point of intrusion**



Wide Area Detection with Ground Radar (GSR)



- All-weather detection of human, vehicle, watercraft and aircraft
- Connection to base station or hand held displays via wireless communication
- User interface via any Internet browser
- ability to penetrate poor visibility environments
- ability to quickly detect moving targets over a 360° field-of-view
- accurate ranging capability extending to kilometers

Mobile Security Tower (Unmanned)

- **Force Multiplier / Reducer**
- **Extends the Users Eyes and Ears**
- **Rapidly Deployable, Mission Flexible**
- **Centralize Situation Awareness**
- **Plug and play Sensor Architecture For Robust Coverage**



Port Installation:



Multiple types of sensors have been integrated into a high-end security system at the Port of Long Beach. CCD and Infrared cameras are part of a larger system which incorporates video motion detection and ground based radar.

Summary



- **Increases reliability**
- **Saves lives**
- **Reduces operational expenses**
- **Force Multiplier**
- **The first line of defense**