Unit X
Electronic Security Systems

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Unit Objectives

Use the Building Vulnerability Assessment Checklist to identify electronic security system requirements that are needed to mitigate vulnerabilities.

Describe the electronic security system concepts and practices that warrant special attention to enhance public safety.

Explain the basis concepts of electronic security system components, their capabilities, and their interaction with other systems.

Justify selection of electronic security systems to mitigate vulnerabilities.

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Electronic Security System (ESS) Concepts

- Basic concepts of site security systems
- Use of ESS
- General ESS Description
- ESS Design Considerations

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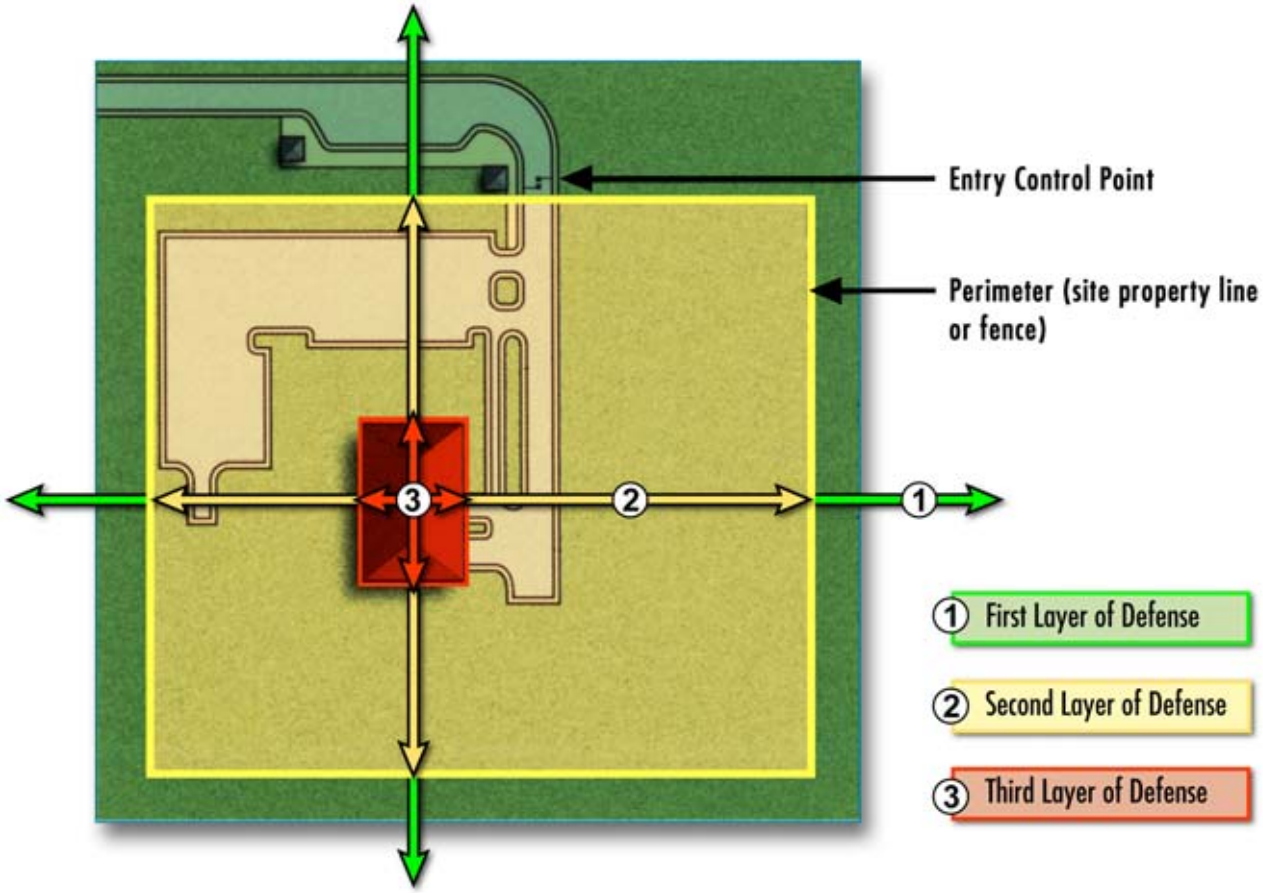
Perimeter Zone



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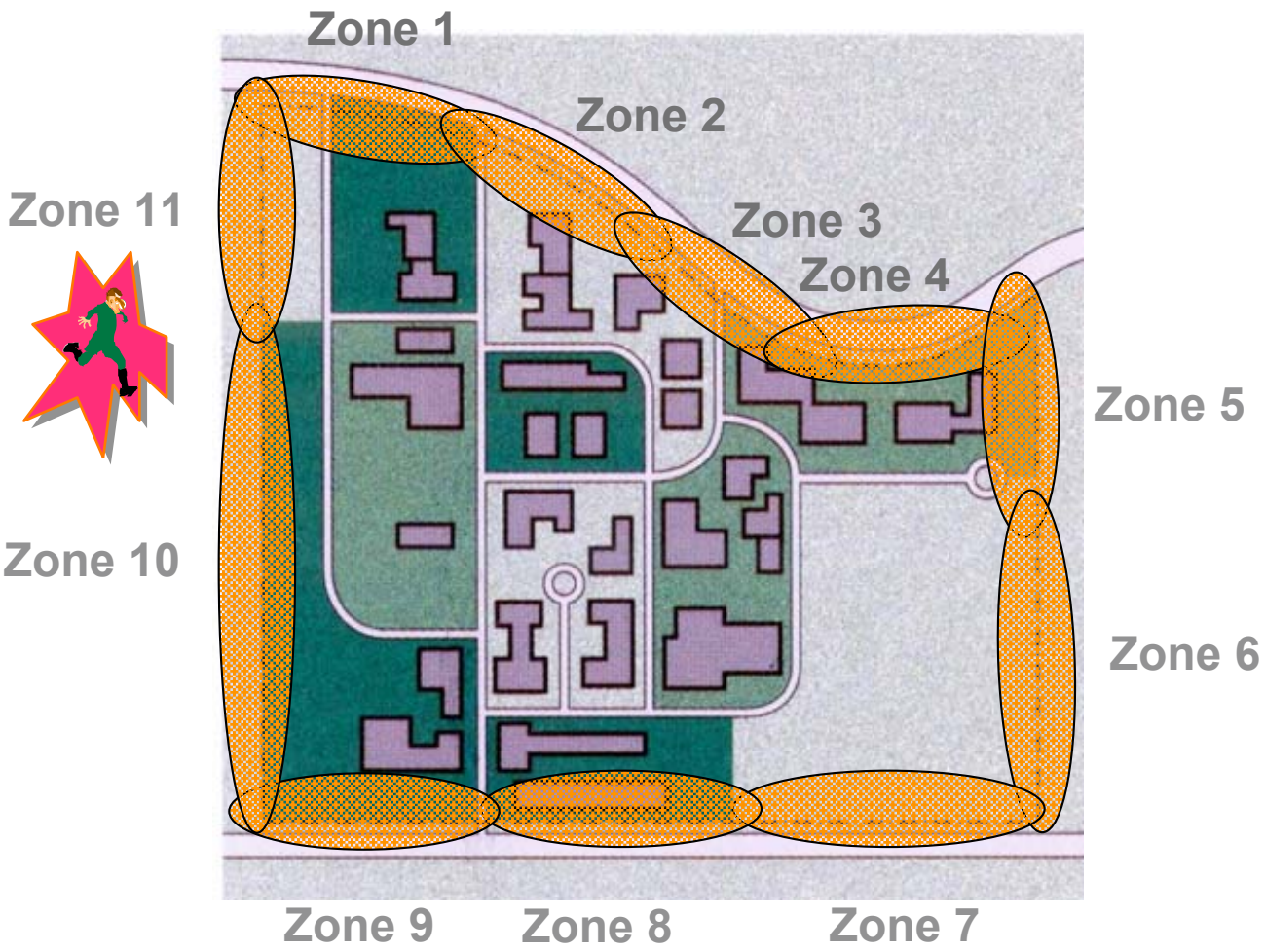
Perimeter Zone



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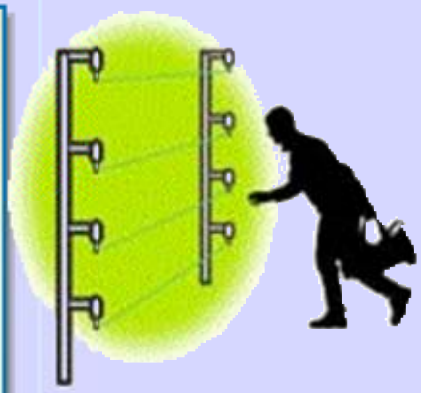
Intrusion Detection Systems



Motion Sensors

CCTV

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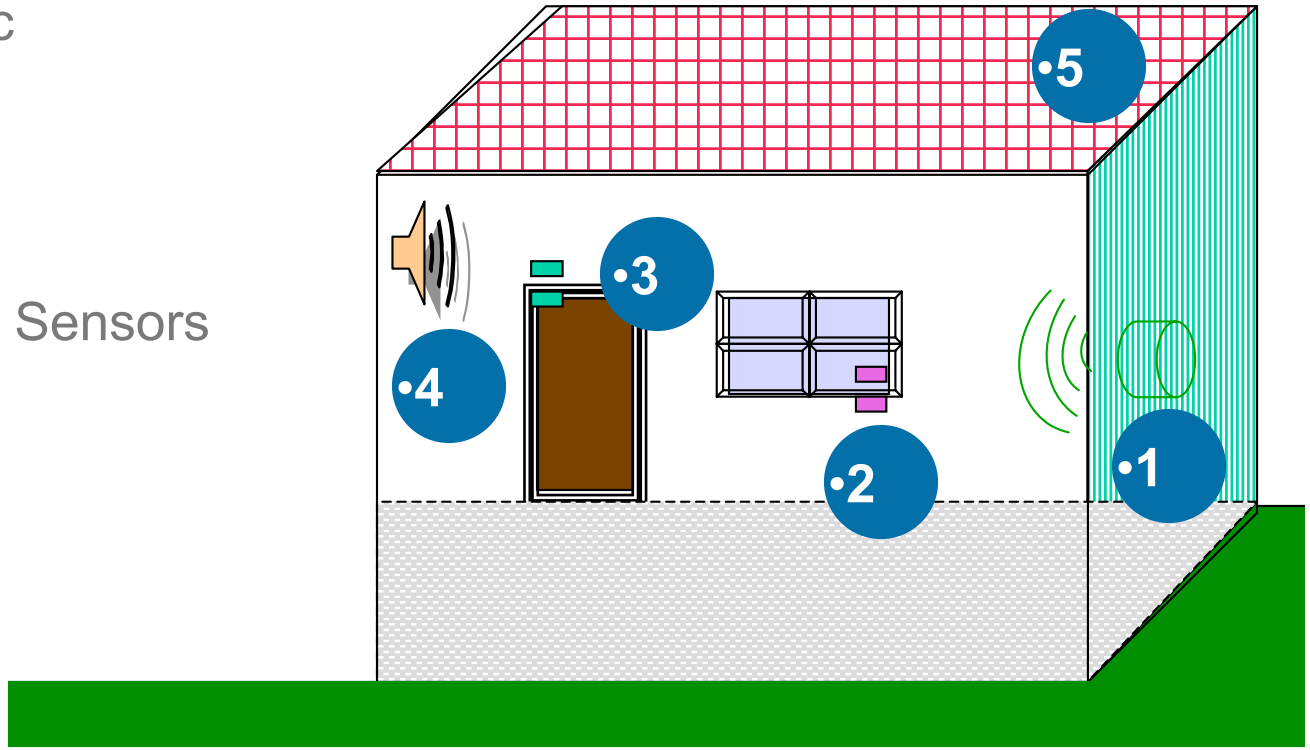
Boundary Penetration Sensors

1. Structural Vibration Sensors
2. Glass Break (GB) - both acoustical and contact mount
3. Balanced Magnetic Switches (BMS) - doors, windows, and hatches
4. Passive Ultrasonic Sensors
5. Grid Wire Sensors



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Volumetric Motion Sensors

Designed to detect intruder motion within the interior of the protected volume

- Microwave Motion Sensors
- Passive Infrared (PIR) Motion Sensors
- Dual Technology Sensors
- Video Motion Sensors
- Point Sensors
- Capacitance Sensors
- Pressure Mats
- Pressure Switches

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Exterior Intrusion Detection

- Strain Sensitive Cable
- Fiber Optic Cable, Bistatic/Monostatic, Microwave, Active, Infrared, and Ported Coax
- Dual Technology (PIR/MW)
- Video Motion

First Layer of Defense

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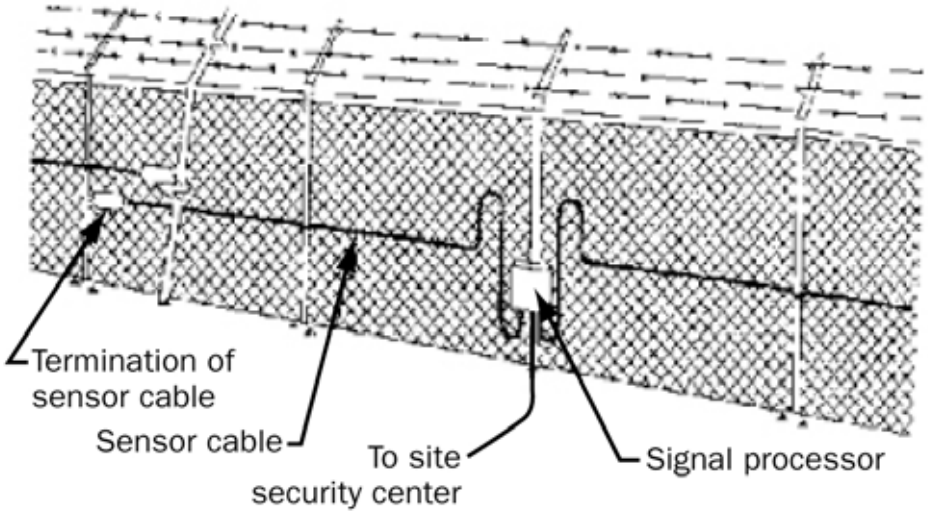
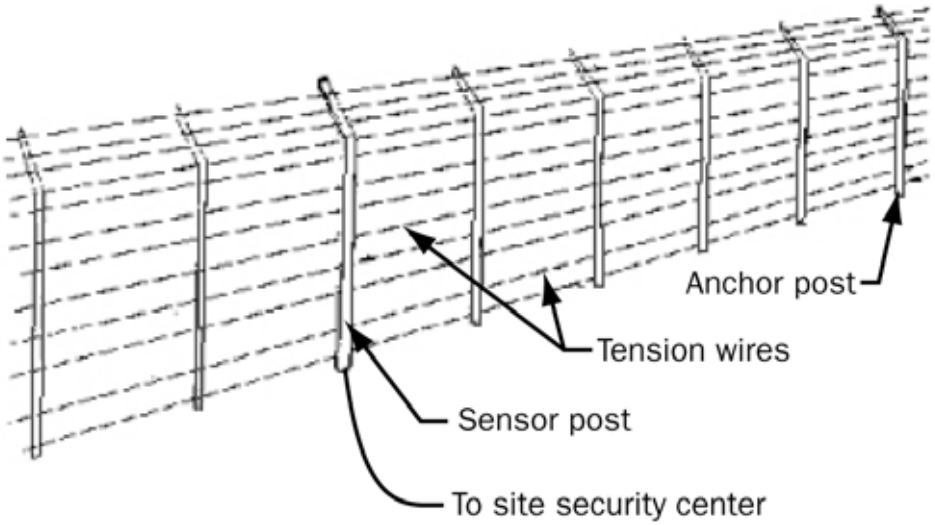
Fence Sensors

- Strain sensitive cables
- Taut wire sensors
- Fiber optic sensors
- Capacitance proximity sensors





First Layer of Defense

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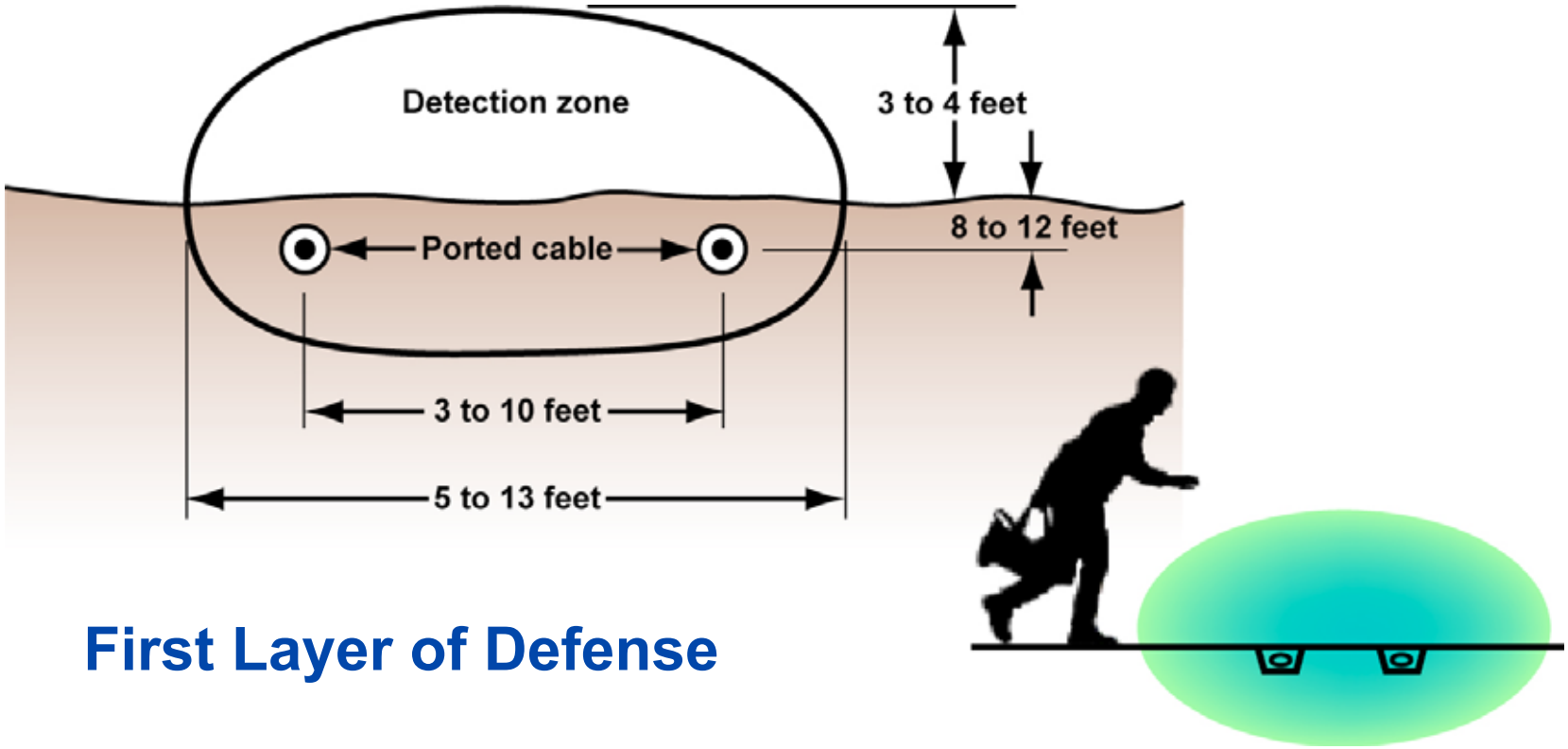
Buried Line Sensors



First Layer of Defense

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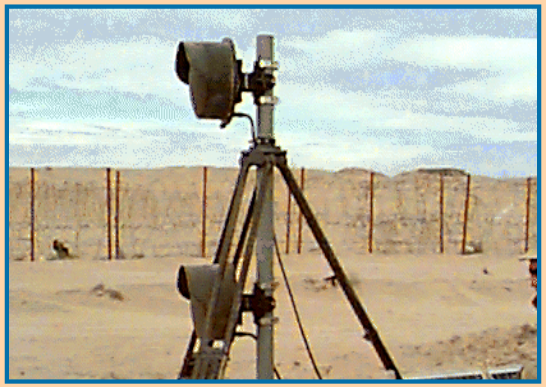
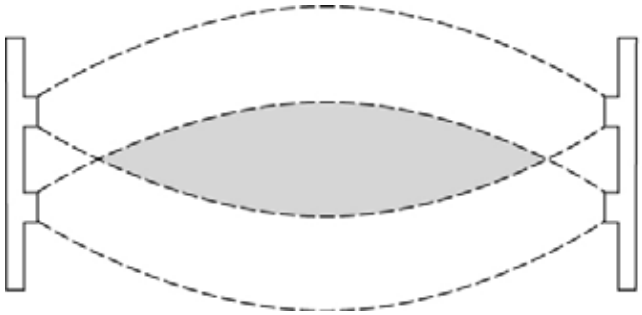
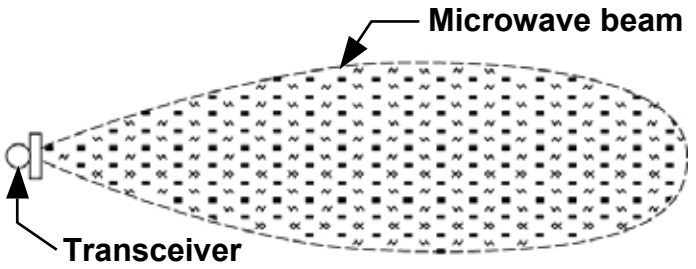
Microwave Sensors



Bistatic System

Monostatic System





First Layer of Defense

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Infrared Sensors

- Active
- Passive

First or Second Layer of Defense

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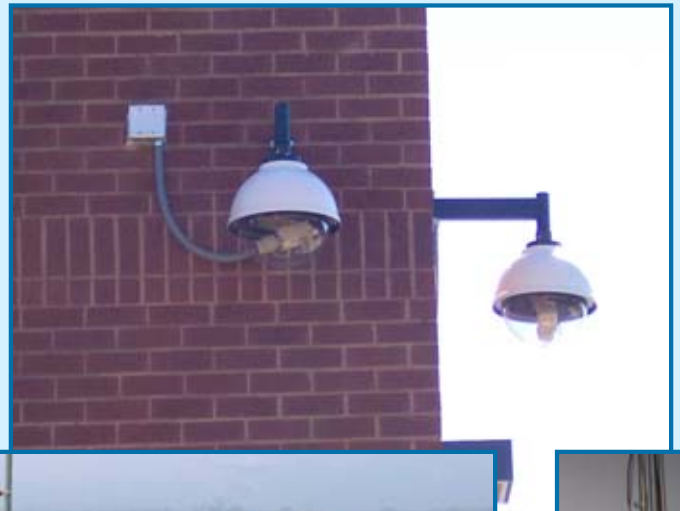
Video Motion Sensors



First or Second Layer of Defense

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Electronic Entry Control

Coded Devices

Credential Devices

Biometric Devices

First or Second Layer of Defense

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Coded Devices

Electronic Keypad Devices

Computer Controlled Keypad Devices

First, Second, or Third Layer of Defense

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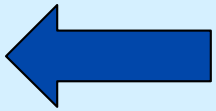
Credential Devices

- Magnetic Stripe Card
- Wiegand-effect Card
- Proximity Card
- Smart Card
- Bar Code



First, Second, or Third Layer of Defense

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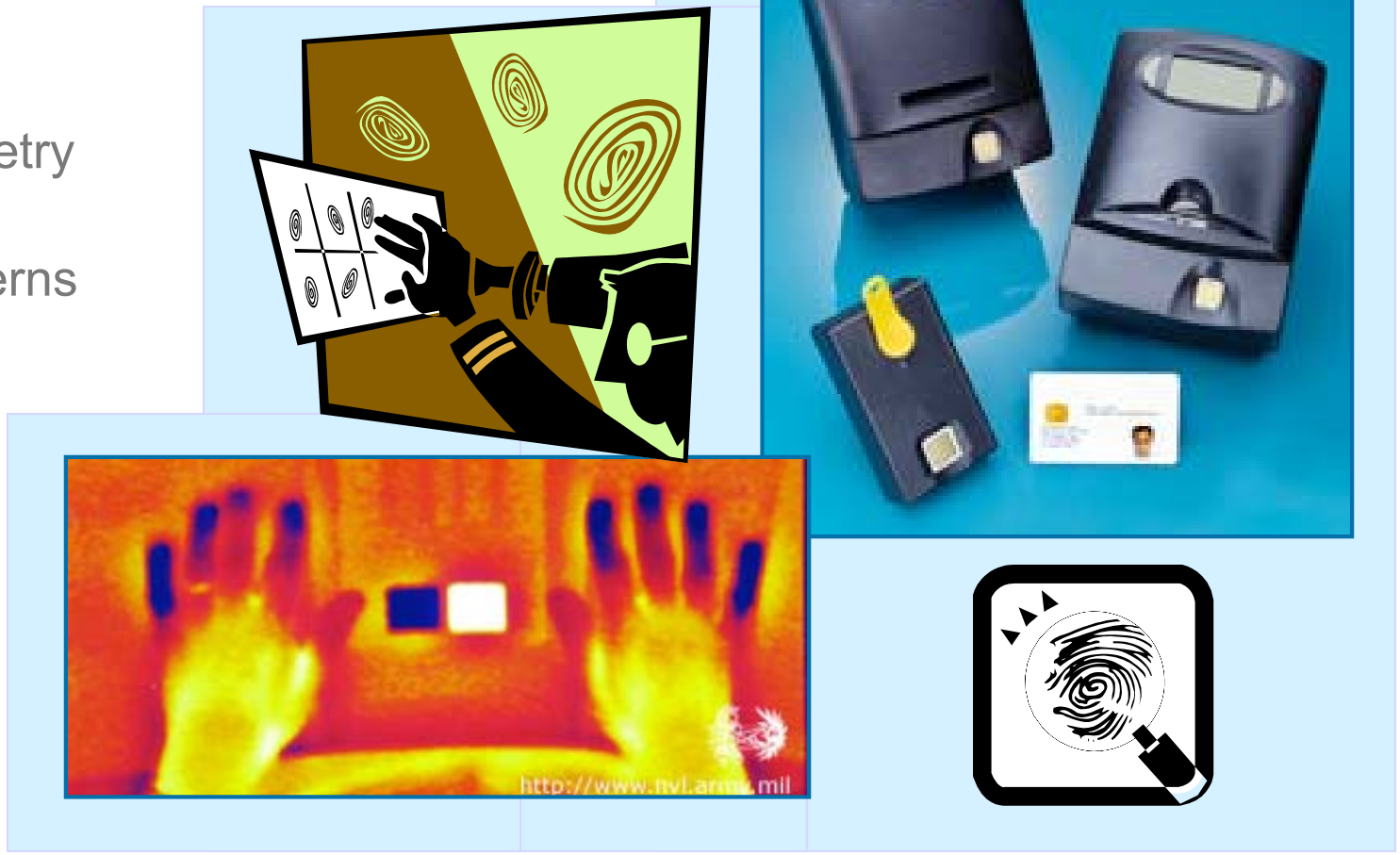
Biometric Devices

Fingerprints

Hand Geometry

Retinal Patterns



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First, Second, or Third Layer of Defense

Closed Circuit Television

Interior CCTV - alarm

Assessment, card reader door assessment, emergency exit door assessment, and surveillance of lobbies, corridors, and open areas

Exterior CCTV - alarm

Assessment, individual zones and portal assessment, specific paths and areas, exclusion areas, surveillance of waterside activities

First, Second, or Third Layer of Defense

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Summary

Use the Building Vulnerability Assessment Checklist to identify electronic security system requirements.

Public safety is enhanced by electronic security system (deter, detect, deny, devalue).

Electronic security systems components and capabilities interact with other systems (LAN, doors, windows, lighting, etc.).

Electronic security systems can be used to mitigate vulnerabilities.

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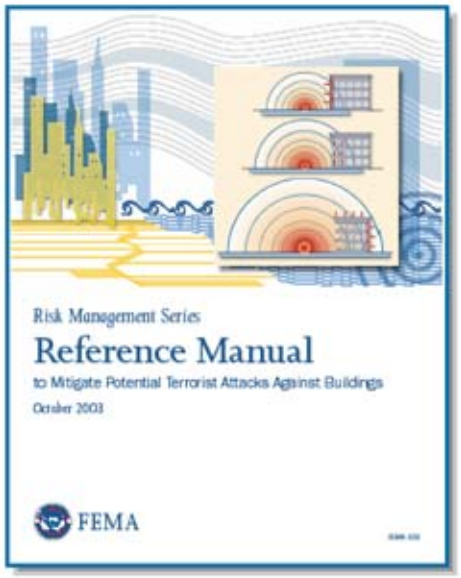
Unit X Case Study Activity

Electronic Security Systems

Background

Emphasis: Various components and technology available for use in electronic security systems

FEM 426, Building Vulnerability Assessment Checklist



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