

Chapter 2

Always A Pioneer, Always Ahead



Evolution of Physical Security

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By the end of the lesson the student will be able to:

- a. understand the history of physical security system**
- b. understand the categories of physical security system and how it is evolved.**

- Introduction
- History of Physical Security
- The Four Categories of Physical Security
 - Physical Obstructions
 - Security Sensors : The evolution of surveillance techniques
 - Guards : The pioneers of security surveillance
 - Command and Control : Automating security responses

Introduction

INTRODUCTION

Physical security is defined as:
Physical measures, polices, and
procedures to protect an organizations
information systems, facilities/buildings
and equipment from unauthorized access,
natural and environmental hazards



**Involves applying task of protecting our physical,
human and intellectual property assets from plunder,
theft or exploitation**

HISTORY OF PHYSICAL SECURITY

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10-15th Century



- **Walls** – Great Wall of China

- **Cliff Dwelling** – Manitou

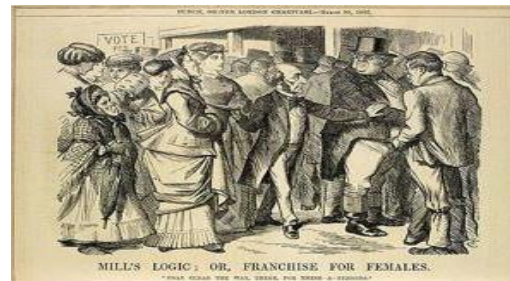


- **Weapons**– sword, knife, axe, spear, bow and arrow, throwing sticks (boomerang), blowgun (blow pipe), shields and gunpowder.

- **Locks**

16-18th Century

- 1867 John Mill's – women the right to vote.



- **Poison gas**



- **Burglar Alarm (1852)**

19th Century

- Smart Card
- RFID
- Biometrics
- Code and ciphers



Museum of Physical Security, USA



Forensics Investigation-Police Dept.

20-21st Century

- Sensor Technologies
- CCTVs – IP base
- RFID Gadgets
- Internet –of-Things Physical Security Devices

Question: Why does the physical security evolved?

Answer: Physical security is evolved due to various type of threats and attacks which are kept growing and perform harmful activities towards the physical system.

Four Categories of Physical Security Evolution

- 1) Physical Obstruction
- 2) Security Sensors
 - The Evolution of Surveillance Techniques
- 3) Guards or Securicor
 - The Pioneer of Security Surveillance
- 4) Command and control
 - Automating security responses

Physical Obstruction

- Meaning

The physical condition of blocking or filling a passage with an obstacle

Physical Obstruction

Example:

In wireless networks encounter physical obstruction, which create low signal or no Internet connection.

Common physical obstructions in wireless networks are:

Cabinets or drawers

Mirrors or Glass Separator

Metal Objects

Thick walls or ceilings

Aquariums

Evolution of Surveillance Technique - 1

1st Generation :

CCTV (Closed Circuit Television)

+

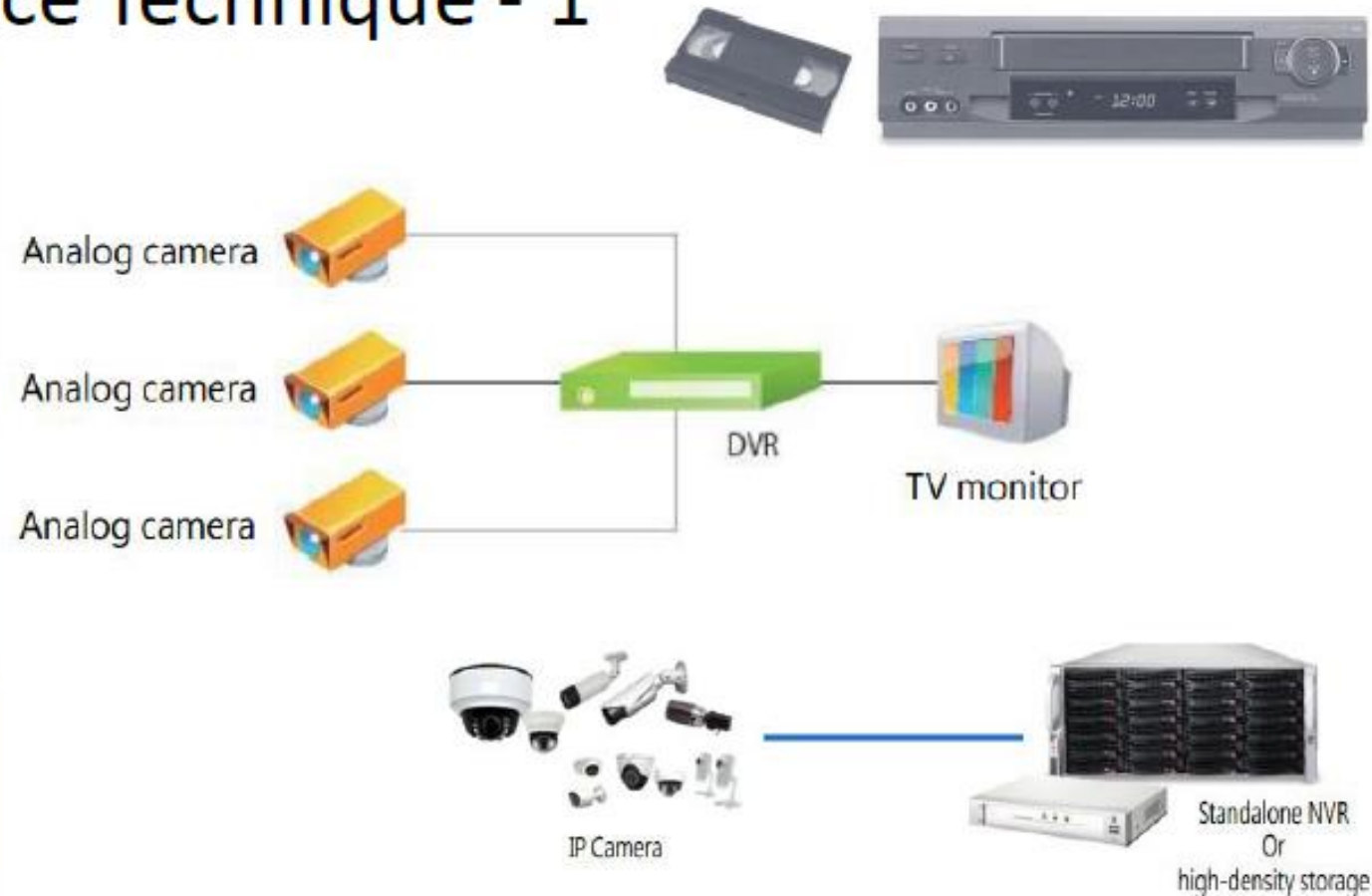
VCR (Video Cassette Recorder)

2nd Generation :

CCTV + DVR (Digital Video Recorder)

3rd Generation :

IP Camera+ NVR (Network Video Recorder)



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Evolution of Surveillance Technique - 2

High Definition

Networking

High
Compression Rate

High Density
Storage

Intelligence

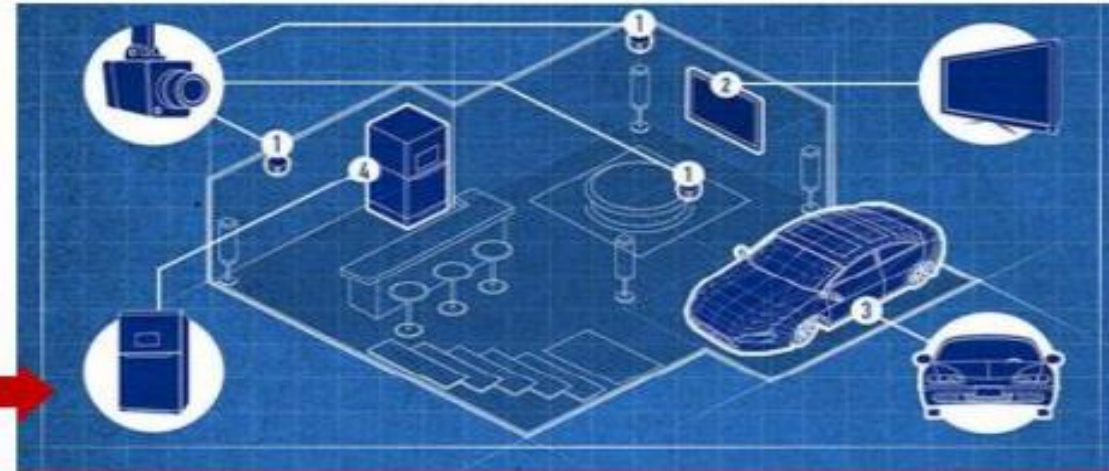
What can you **SEE** through surveillance system:



Clear



Understandable



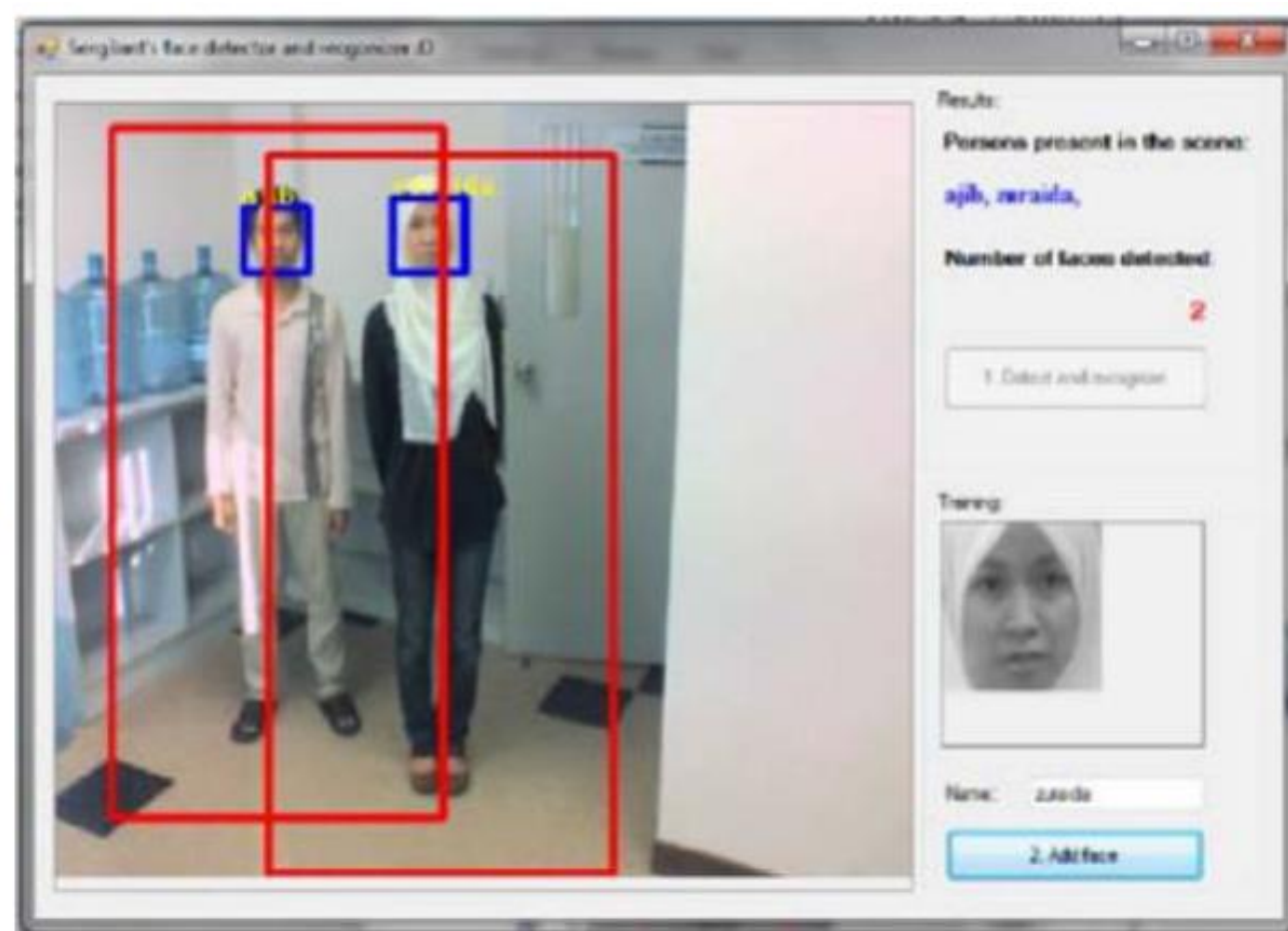
Meaningful

Example: Face Detection + CCTV

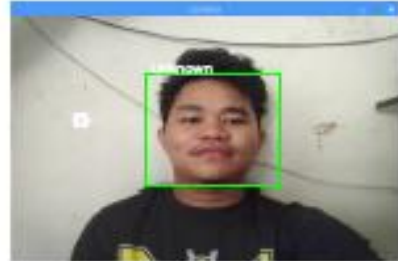
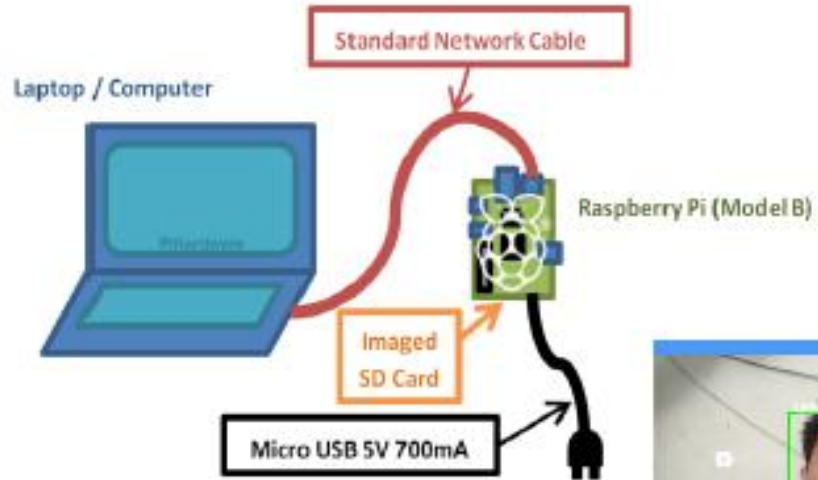
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Panasonic WV Analogue Indoor Camera



Example: Face Detection + Raspberry Pi



At different distance



At different Source of light

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Evolution of Surveillance Technique - 3

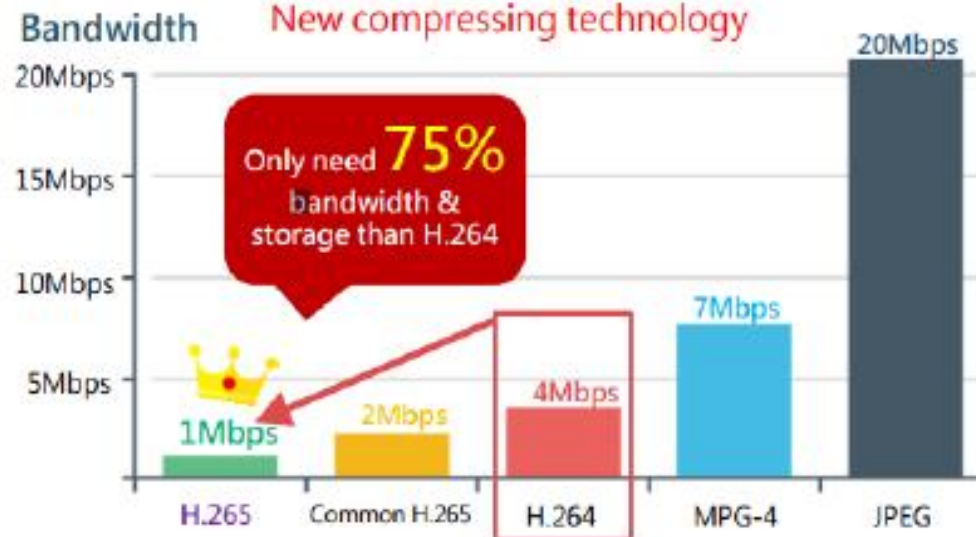


Remote Monitoring

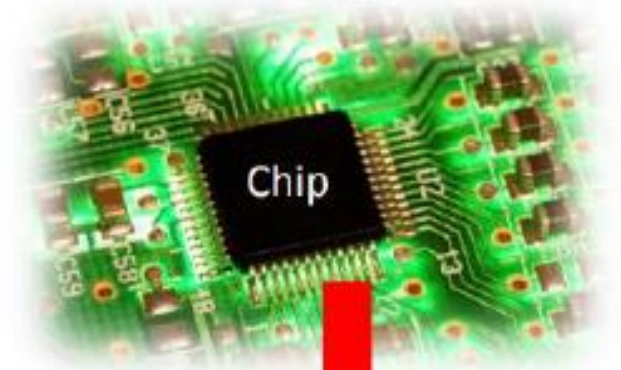


Innovative compressing technology

* Based on same 1080P resolution



Innovative video encoding technology



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Evolution of Surveillance Technique - 4

High Density Storage – Big Data



3S Media



Plate Recognition

Intelligent Video Analysis

Motion Detection



Tamper Detection



Privacy Mask

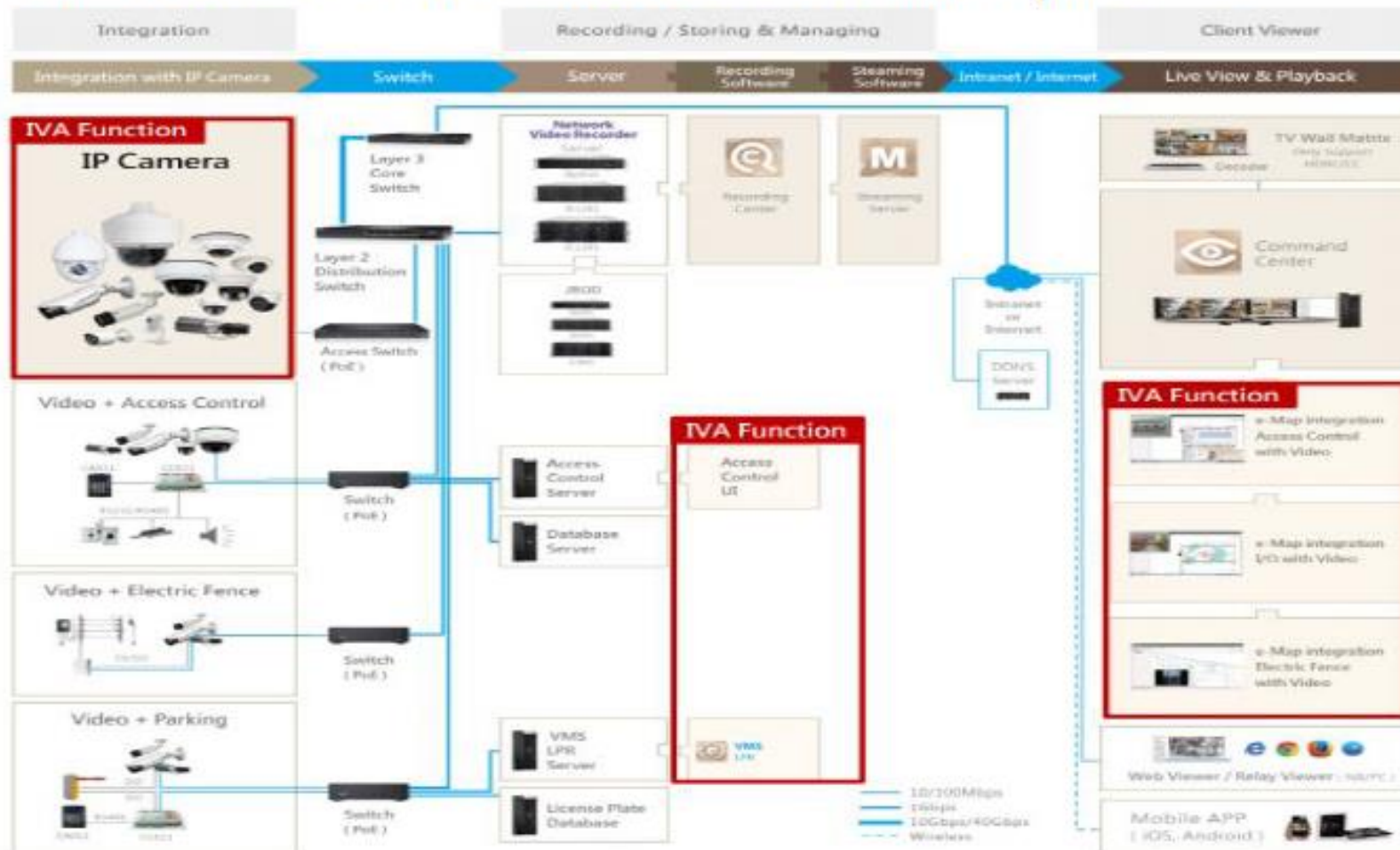


Security Sensor

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Evolution of Surveillance Technique - 5



Surveillance
System
towards IoT
Applications

Guard: The Pioneer Security

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- Privately and formally employed person who is paid to protect property, assets or people.
- More tactical and strategic utilization of technology will result in collaboration and improved security management processes to proactively prevent both physical and electronic security breaches.



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Automating Security Response

- The exercise of authority and direction by a properly designated commander over assigned and attached forces in the accomplishment of the mission
- Command and control functions are performed through an arrangement of personnel, equipment, communications, facilities, and procedures employed by a commander in planning, directing, coordinating and controlling forces and operations in the accomplishment of the mission.



Thank You



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