Healthcare Vertical

Hospitals | Ayurvedic | Pharmaceuticals | Chemical Industry
The management should consider or prioritize the Security and Safety of –

1) Patients
2) Employees
3) Visitors
4) Vendors, etc...

There are various technologies which are currently available to ensure Security and Safety in various ways, such as –

1) Number Plate Vehicle Detection System
2) Face Recognition System
3) People Counting
4) Remote Monitoring
5) Ambulance Van Surveillance
6) Access Control
7) Intrusion Detection and much more depending upon the scenario, application, and requirement.
Entrance & Exit

- Traffic Management Entrance & Exit
- TPE
- Bluetooth Card Reader
- ANPR Camera
- Barrier Gate
- LED screen
- Pole
- Coil trigger
Entrance & Exit

- Pre-registered Vehicle with Bluetooth Card
  - Bluetooth Card Reader (optional)
  - ANPR camera
  - Card information (Vehicle information)
  - TPE
  - Barrier Control Policy Check (Such as: white/black list)
  - Vehicle information Record
  - Check Pass
  - Vehicle information
  - Barrier Open
  - Barrier Gate

- Vehicle without Bluetooth Card
  - ANPR camera
  - Capture the license plate and vehicle information
  - Detection Coil
  - Anti-falling Coil

iVMS Platform
Entrance & Exit

- The list of vehicles number plate can be uploaded in software as White List or Black List.
- Whenever a vehicle arrives in front of the camera/gate, the camera will capture the number plate of that respective vehicles. The cameras work on OCR technology and will share the number plate of the vehicles to software.
- The software will compare the number plate with the database and take necessary decision.
- On arrival of White List vehicle, the boom barrier will open and the vehicle can come into the premises.
- If there is a vehicle which is either Black List or unknown, the security will get the notification/alarm for further action.
- The report of the same can be generated from software daily, weekly, monthly or manually as per requirement.
- The software also allow the search the vehicle(s) details by searching using the number plate.
UVSS for Industry or Manufacturing Plants

- Trigger module
- Linear imaging module
- LED
- Speed matching module

Control Cabinet

Photoelectric Trigger
UVSS - Output
UVSS - Key Features

- High Resolution – 2048x12000, unstitched
- Unique Speed Matching Module to Reduce Image Distortion
- Robust Design, IP68, Load Bearing: 30 Tons, Temperature Range: -40°C to +70°C

- Modular Design, Easy to Install
- High Quality Line Scan Camera, FA Lens, LED Array
- User Friendly User Interface
- Open SDK, can be Integrated with CCTV, BAMS, and Access Control System
## Face Recognition Access Control

**Key Features:**

- **HD Face Picture with 2MP Camera**
- **Up to 99% recognition rate with excellent performance under backlight, dim light or strong light environment**
- **Fast Facial Recognition**
- **1 meter recognition distance**
- **Live human face detection with 3D function, distinguish live faces from pictures and videos**
- **10,000 Faces**
- **Target Height between 1.4 to 1.9 meters**

**Optional Features:**

- **Fingerprint Reader**
- **Stores up to 5,000 Fingerprint**
- **Within 1 second verification**
The securities handle emergency callings from employees, nurse, patients, etc.

Securities will send alarms to the alarm center for big events.

Suitable for open areas:

- Video Surveillance
- On-site Video
- Two-way Audio
- Sound Mixed Video
- Speed Dome Linkage
- Emergency Supplies

One-touch Pole Panic Alarm Station

- Open Ground
- Square
- Main road
- Replaceable to Dome Alarm Station

Suitable for open areas

One-touch Box Panic Alarm Station

- Security Guard Room
- Control Center
- Building Outside

IP65, with alarm light. Installed on outdoor rods or walls.

One-touch Panic Alarm Station

- ICU Room
- R&D Cabin
- Toilet
- Bathroom
- Laboratory

Flexible application in all scenes of hospital & industry.
What are Thermal Cameras?
The cameras which are used to detect & picturize thermal radiations are called “Thermal Cameras”. 
General Surveillance

Detection distance

<table>
<thead>
<tr>
<th>Distance</th>
<th>Detection</th>
<th>Recognition</th>
<th>Identification</th>
</tr>
</thead>
<tbody>
<tr>
<td>8mm</td>
<td>40m</td>
<td>20m</td>
<td>160m</td>
</tr>
<tr>
<td>50mm</td>
<td>125m</td>
<td>60m</td>
<td>1000m</td>
</tr>
<tr>
<td>75mm</td>
<td>375m</td>
<td>188m</td>
<td>1500m</td>
</tr>
</tbody>
</table>

Notice: this distance is based on 25μm sensor
General Surveillance

Dual Lens Thermal Camera

Monitoring of OHE can be done using Dual-Lens Thermal Camera to monitor the breakage / fire over the line using thermal lens & actual scenario using optical lens.
Anti-Explosive Camera

Three ingredients of combustion:

- Explosive substances (Combustible gases & solids)
- Combustion-supporting gas (Oxygen)
- Combustion source

- As we know that there are three ingredients necessary for combustion.
- The explosive substances and combustion-supporting gas are the external factors we cannot control.
- But we can control the internal factor, i.e. the combustion source with the help of specially designed cameras.
Flame-proof principle

Flame-proof type camera uses flame-proof housing to prevent internal explosion spreading. The cylindrical flameproof joint and adhesive joint face can prevent flame spread out of the camera while explosion happens.

ATEX Authentication

Hikvision explosion-proof series cameras are covered by 304/316L stainless steel, and thickness of the cover is larger than 3.5mm. Using ANSYS for finite element force analysis, the structure can support 1.5 times of inside explosion pressure. There is no broken or permanent deformation after explosion.
Perimeter Surveillance for Industry or Manufacturing Plants

**Solution Features**
- Intrusion Detection
- False Alarm Filtering
- Intrusion Alarm
- Alarm Linkage

**Alarm accuracy:** 90%

**Diagram:**
- APP
- Client
- Linkage

- Hikcentral Platform
- Normal Camera
- DeepInMind NVR
- DeepInView Series Camera
- Switch
Rugged and Wearable Body Cameras can record activities of citizens and civil authorities as they happen. The advanced technology, portability, and ease-of-use make them extremely effective companions for law enforcement. The device is featured with GPS locators, you'll know where the emergency exists as it happens. These cameras build forensic evidence with safely stored data, and play back video footage clearly and accurately. Users will protect citizens and peacekeepers alike with these wearable video recording devices.
Body Worn Camera - Monitoring via 3G/4G

- Device to Device Intercom
- Device to Control Center Intercom
- Forward GPS, Alarm and Emergency Capture to Control Center (iVMS) via 3G/4G
Body Worn Camera – Recording

Video Recording over Wi-Fi

The NVR or Central Storage will start fetching data from the Body Worn Camera once it is under same Wi-Fi Zone.

Video Recording over Docking Station

The Docking Station will start fetching data from the Body Worn Camera via USB port. External screen can be connected for management or maintenance.
Office Building - Access Control

Key Features:-

- Multi-Door Interlocking
- Multi-Cards & Remote Unlock
- Anti-Passing Back
- Multi-Authentication
- DOTL & Duress Alarm
- Blacklist & Illegal Card Alert
- Tamper Proof Alarm
- Card & Event Records
Office Building - Access Control

Single Door Anti-passing Back

Multiple Authentication

Case Fire

Software Platform will receive alarm event (next version support linkage)

Duress Card

Card + Duress Code

Duress Alarm

Local Authentication and Remote Open

Super Password

Manager Swiping Card

Employees Swiping Card

Restricted area

Public area

Remote open

Host and Reader Buzzer (or Door Open)
Each staffs can be provided with an Access Card or get their finger registered.
The access reader supports camera and will capture photo.
This can be used to track the staff(s) within the hospital in real-time.
Can ensure secured/authorized entry in various labs and offices, like Blood Bank, Research Room, Pathology Lab., etc.
The report of the same can be generated daily, weekly, monthly, etc.
Office Building

➢ The entire surveillance area can be sub-divided into various zones

➢ Various sensors can be connected such as Motion Detection/PIR sensor, Smoke Detector, Magnet Contact, Shutter Contact, etc. to get alerts in case of intruder

  ✓ Magnetic Contact can be used to provide alert(s) if cash drawer or any cabinet is opened or trying to open between a predefined time

  ✓ PIR sensor(s) can be used to detect unwanted movements under no light condition. It can be installed at warehouse, store room, parking area, restricted area, and much more where there should expensive drugs are kept and only authorized doctors or people can enter

➢ Hooter or Siren can be connected to get audio and/or visual alert

➢ The panel can be integrated with the camera on a single platform. This can help to monitor all the alerts real-time and simultaneously monitor or view the respective camera

➢ The panel can be controlled remotely, such as Arming, Dis-Arming, etc.

➢ Can establish 2-way communication from control room to the location of intrusion. Thus, giving warning for an intruder
Broadcasting Solution

- Network Cable
- PTZ Camera
- RG6 Cable
- Audio Cable
- MIC
- Broadcasting DVR
- Laptop with teaching material
- HDMI/VGA Cable
- Network Cable
- FTP
Broadcasting Solution

- Broadcasting solution can be used for various purpose in an hospital
- It consist of a PTZ (Pan/Tilt/Zoom) Camera, overview camera, MIC and broadcasting DVR.
- PTZ camera can be used to focus and/or zoom on the area of interest
- Overview camera helps to get the entire room scenario
- MIC is used to capture and save the conversation between the doctors, students, etc.
- Broadcasting DVR is a hybrid device which support HD as well as IP cameras, HDMI/VGA input, and much more.

Working -

- The recording in DVR can be done in various mode, such as PIP, side-by-side, etc.
- The entire session can be uploaded on FTP for future reference
- In real time, the DVR can broadcast to various location within the campus or via YouTube
- Group of doctors can perform the operation and the teaching faculty sitting outside can operate the PTZ camera via keyboard for better understanding
- The recording saved in the FTP server will be index which makes easy to search in future
Broadcasting Solution – Types of View

- **View 1**
- **View 2**
- **Multi-Picture Mode**
- **PIP (Picture-In-Picture)**
- **View 1**
- **View 2**
- **View 2**
- **View 3**
Broadcasting Solution - Case Study - Cure Hospital

This is a system which can be used to train medical students in order to teach how to treat patient under the influence of High Blood Pressure, Heart Attack, etc.

The cameras along with MIC can be fixed inside the room. The doctor(s) will be performing the needful action on a dummy body and the students sitting outside can easily view the movements of the doctor(s).

Once the teaching is over, the entire session can be uploaded on the FTP link of the respective Hospital for further reference of students.

PTZ camera can also be connected in order to Pan/Tilt/Zoom on any specific area by sitting outside or remotely via Keyboard or GUI.
Case Study - Care Hospital

Teaching Process

System Setup
Pharmaceuticals and Chemical Industry – Machine Vision

Machine vision cameras play an important role in the Pharmaceutical industry. This is because they have –

- Response time is faster than 100ms
- Accuracy level > 99.99%
- Strong and Rugged
- Can operate in various scenarios

**Application –**

- To check whether all the tablets slots are filled using Image Processing
- Sorting of various medicines at finishing / packing stage
- Counting and decoding the barcode
Thank you