ADVANTECH

Enabling an Intelligent Planet

Intelligent Retail Solutions

COVID 19 Spread Prevention

Sandra Harriague

LATAM Channel Manager

2020/06

ADVANTECH

Mission
Enabling an Intelligent Planet

Headcounts
8,000

Revenue
USD $1.8 Billion

Market Cap
USD$4.5 Billion (Oct. 2018)

Service Field
Industry 4.0, Industry IoT,
Embedded Computing,
Smart City (Medical, Retail, Logistics)
Serve Worldwide IoT Solution Integrators

Sector Based Business Units

Embedded-IoT + Allied DMS (Design-in)

Networks & Communications

- Telecom & Mission Critical Systems
- Enterprise Network Platforms
- Network & Embedded Switches
- Video Broadcasting Solutions

Embedded Core & IoT Modules

- Computing on Modules
- Single Board Computers
- Industrial Motherboards
- Embedded Box Computers
- M2I/Connected Appliances
- Industrial Display Solutions
- Industrial Flash Storage (SQFlash)
- Embedded Wireless Modules (M2.COM)
- WISE-PaaS & Cloud Software
- ARM-based Computing
- Modular Board Design Services
- Gaming Solutions

Applied Computing

- Industrial Mobile Computing
- Applied Computing DMS
- Allied-DMS/China
- Allied-DMS+DTOS/Europe

Industrial-IoT

Industrial Automation

- Industrial I/O & Controllers
- Automation Computing & HMI
- Motion Controls & Machine Vision
- Remote IoT Devices (WISE)
- WebAccess+ Software
- iFactory (Industry 4.0) Solutions
- Machine Automation Solutions
- Energy & Environment Solutions

Intelligent Systems

- Industrial Computers
- Industrial Servers & Storage
- Intelligent Video Solutions
- Transportation Solutions

iConnectivity

- Network Edge Solutions
- Industrial Switches
- Industrial Wireless Devices
- Industrial Cellular Routers

iCity

Intelligent Healthcare

- Medical Computing
- Intelligent Hospital Solutions

Intelligent Retail

- iRetail Platforms
- Intelligent Retail Solutions SRPs
- Digital Signage Solutions

Intelligent Logistics

- In-Vehicle Computing
- iLogistics & Fleet Management Solutions

AIM Series Industrial Tablets

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Intelligent City Services

ADVANTECH WISE-PaaS AIoT Solutions & Marketplace iCity

Cold Chain Management	ePaper Management	People Counting & Heatmap	Interactive Digital Signage	Facial Recognition	AI Infection Prevention
Edge.SRP LEO Sensor	Edge.SRP ePaper CMS	Edge.SRP PCount	Edge.SRP Signage CMS	Edge.SRP FR	Edge.SRP FR

WISE-PaaS/ DeviceOn WISE-PaaS/AndroidDM SOTI MOBICONTROL

USM Series

AIM 3 Series

UTC-2 Series

Avalo Family USC Series

Slim AiO UTC-1 Series

Lite AiO UTC-3 Series

Flagship AiO UTC-5 Series

Integrated AiO Kiosk UTK-5 Series

Ultra Lite Kiosk UTK-615

Modularized AiO Kiosk UTK-7 Series

Outdoor Kiosk UTK-932

Box PC | **mPOS** | **Open Frame** | **All-in-One Service Computer** | **Kiosk**

Retail & Wholesale

restaurants

Public Services

Outdoor Services

Fitness Center

Airport

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AI Counting Edge Solution

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AI Counting Edge Solution Overview

arm
android

intel AI
OpenVINO
Windows 10

Basic

UCAM Series
Footfall Counting AIO Camera

UCAM-2D

UCAM-3D

Advanced

USM-AI Series
AI based Counting/Heatmap/demographic Edge Sever

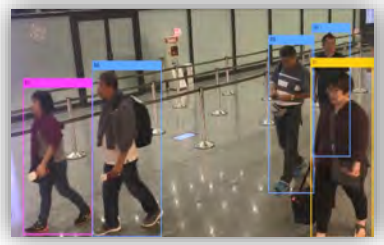
USM-260VAC

USM-600VAC

Human Head Detection

Human Body Detection

Human Face Detection



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Video AI Counting Edge Function Map

	Detection Technology	Services: Counting	Services: Heatmap	Services: Queuing/ Loitering	Services: Demographic	Applied Scenarios
Basic UCAM Series	Human Head	✓	✗	✗	✗	Entrance, Corridor
Advanced USM-AI Series	Human Body	✓	✓	✓	✗	Outdoor, Corridor, Outdoor
	Human Face	✓	✗	✗	✓	Counter, KIOSK, Merchandise Shelf, Signage

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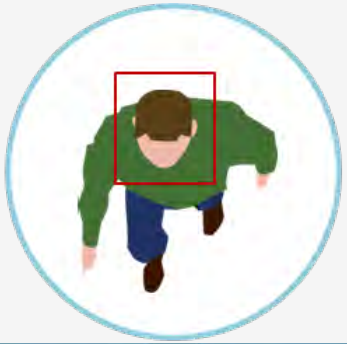
Types of scenarios, applications environment

Basic

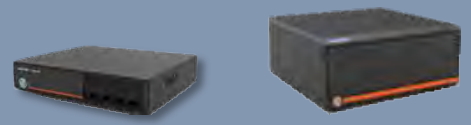
UCAM Series



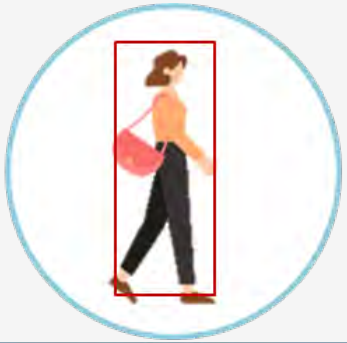
Human Head Detection

- Simple traffic flow
- Distinguish the object height
- Entrance
- Large width entrance

Advanced



USM-AI Series



Human Body Detection

- Complicated traffic flow
- Outdoor
- Queuing

Human Face Detection

- Demographic
- Face count
- A place that will attract people's attention

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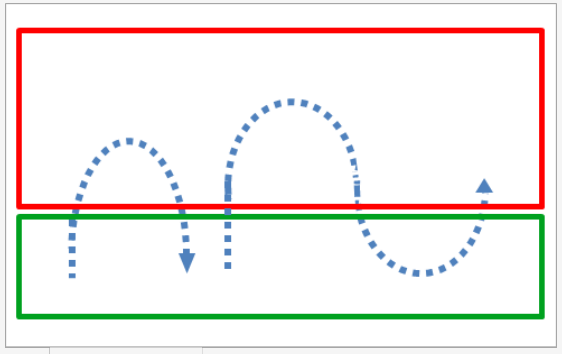
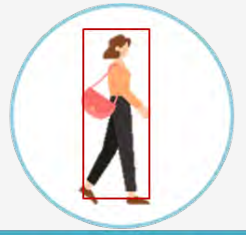
High Counting Accuracy

Human Head Detection

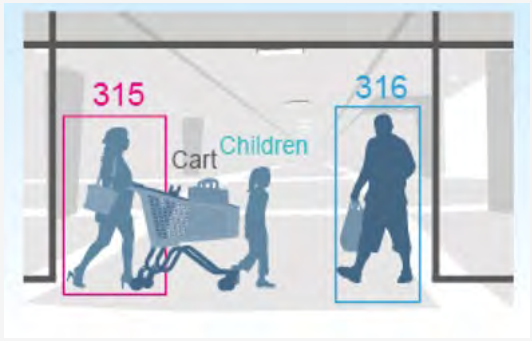


U-turns Tacking

- Detection on U-turns with tacking ability to avoid double counting



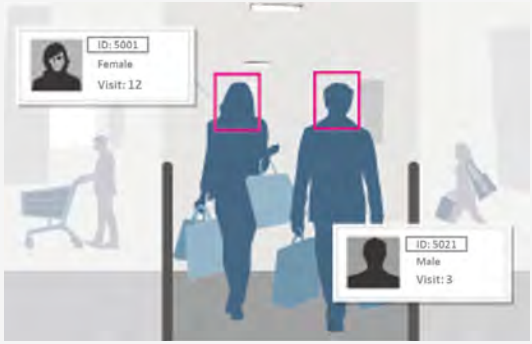
Human Body Detection



Human Body Tacking

- Detection on lingering with tacking ability
- Support counting and tacking time setting

Human Face Detection



Human Face Recognition

- Face detection with recognition function avoid to multi-count the re-visitor
- Support counting time setting to adjust the counting accuracy

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Global Sport Brand Chain Store

End Customer

CHALLENGES

Turn-in rate
didn't meet the expectation

Accurate
footfall counting data is a must

WHY US

High accuracy in high traffic with high stability

Outdoor — Human Body Detection

10,000 counts/hour

80% Accuracy Rate

Indoor — Human Head Detection

2,000 counts/hour

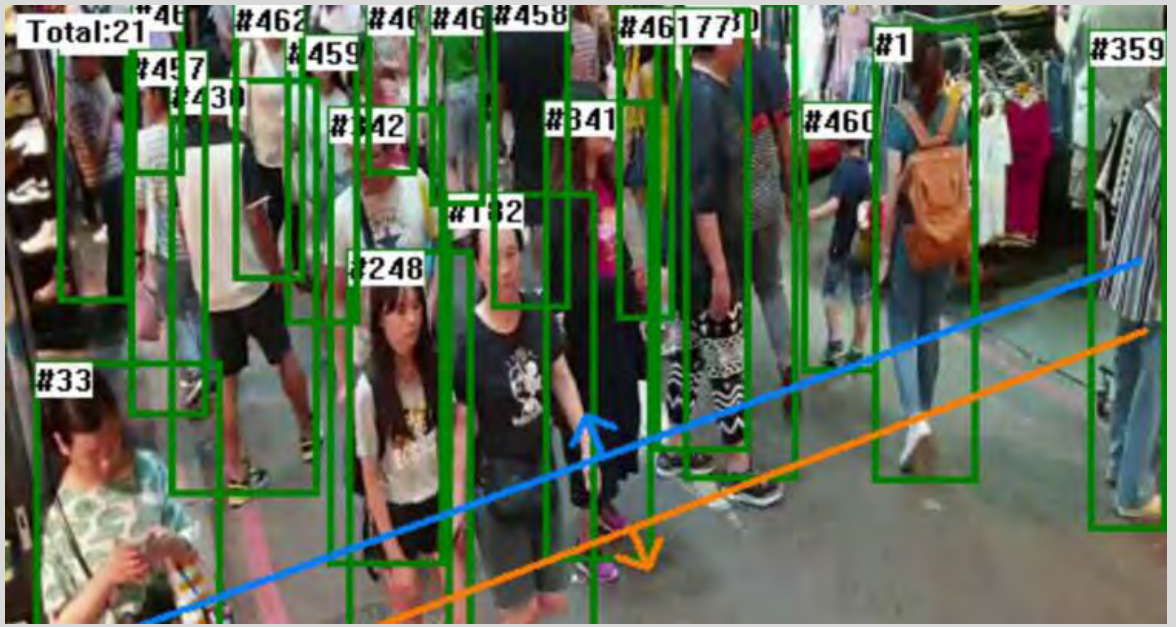
90% Accuracy Rate

HOW WE DO

- 3D UCAM x 8 (Instore counting)
- Video AI Counting Edge x 2
- Out store counting IPCAM x 2
- Heatmap IPCAM x 6

IRetail StoreBI

StoreBI



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Global Baking Chain Brand

End Customer

CHALLENGES

Turn-in rate
didn't meet the expectation

Customer behavior
what's the customer dwell in front of the counter

Install limitation
can only install one camera

WHY US

One camera source provides multiple services

Human Body Detection

Heatmap

Counting

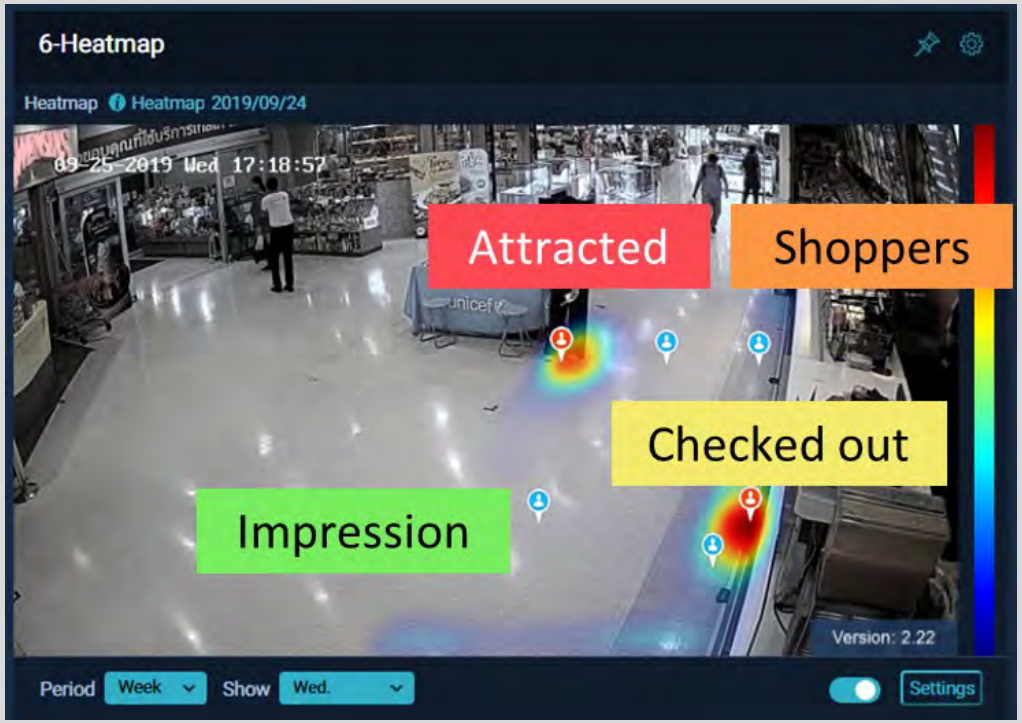
Pass-by **5,500** counts/hour

HOW WE DO

- **Video AI Counting Edge x 1**
- **IPCAM for face counting x 2**
  (Visitor counting & heatmap)

iRetail StoreBI

StoreBI



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National Food Chain Brand

End Customer

CHALLENGES

Target Audience
Analysis to the key marketing product

Re-visit number
customer and employees should be removed

HOW WE DO

- **Video AI Counting Edge x 1**
- **IPCAM for face counting x 2**
  (Visitor Face Count & Demographic)

iRetail StoreBI

StoreBI

WHY US

High accuracy face counting and demographic

Human Face Detection

Unique Counting

Demographic

No need to integrate with database

No need to change the shopper's operation

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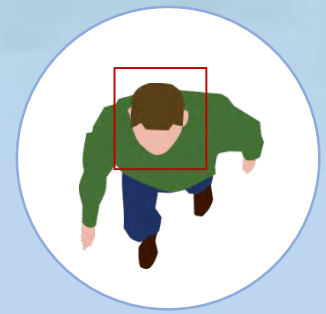
Edge: **Basic** Counting Solution



Human Head Detection

Video Counting Edge

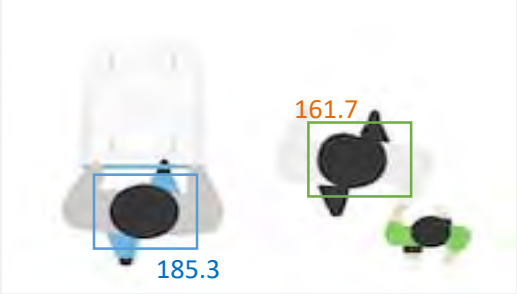
UCAM 3D

- **Dual lens** for 3D depth technology
- Immune to shadow and reflections
- 95%~98% accuracy

UCAM 2D

- **Single lens** 2D human head detection
- Low cost and great performance
- 85%~95% accuracy

Distinguish the object thru depth



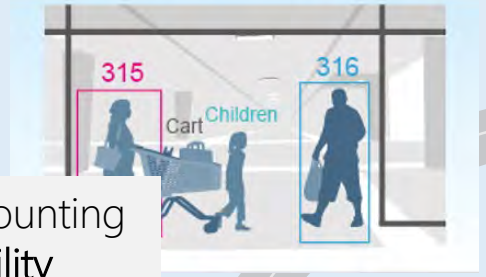
U-turn Tacking

Cross Camera Counting

Bi-directional Traffic Flow

AI Edge: **Advanced** Counting/Heatmap Features

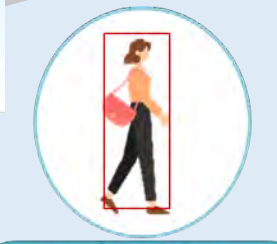
Counting



- Bi-directional counting with tacking ability

Unique Count

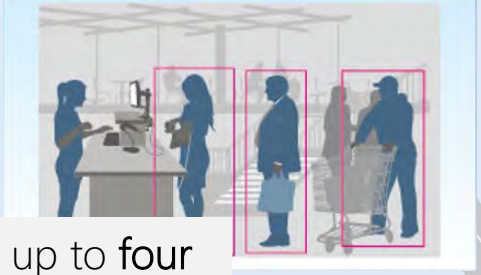
- Face detection with recognition function avoid to multi-count the re-visitor



Human Body Detection

Human Face Detection

Queuing

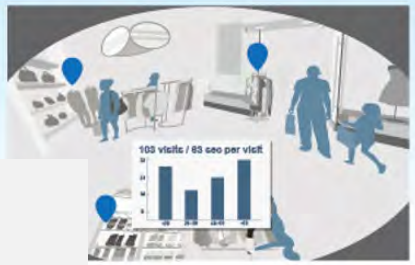


- Support up to four detecting zones

Video AI Counting Edge

OpenVINO

Heatmap



- Support up to four filter areas setting

Demographic

- Analysis the visitors gender & age

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AI Facial Recognition

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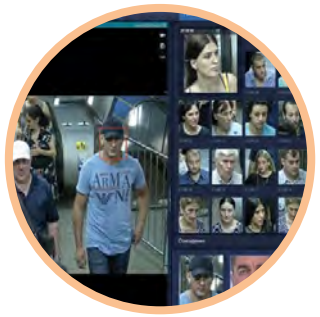
Major Applications of Facial Recognition Technology

Access Control

Attendance Taking



Surveillance

Visitor Management

Operation Management

Business Enhancement

Application Integration

Face ID Login

Interactive Digital Signage

Customer Recognition

Payment Integration

Re-visitor Identification

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Target Facial Recognition Solution
Attendance Taking

Location Attendance Taking

- USC/UTC/HIT
- IP Camera
- Building, Factory, Hospital

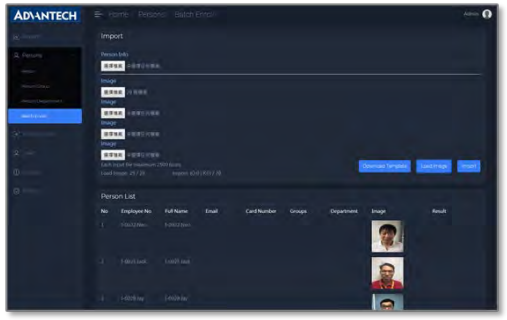
Mobile Attendance Taking

- AIM-Tablet
- Cold Chain, FMS, Warehouse

Standard App

VFR

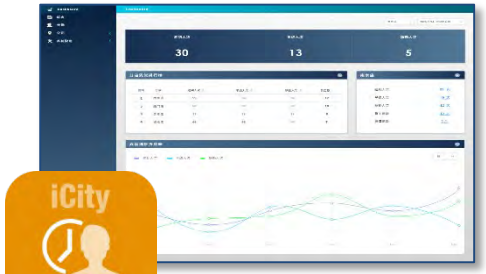
VFR Connect



Web Portal (LAN)

Video AI FR (VFR) Edge

Single Site (Edge Only)



Web Portal (Internet)

VFR Edge per single site

Multi Sites (Cloud CMS)

Application Scenario

Solution Architecture

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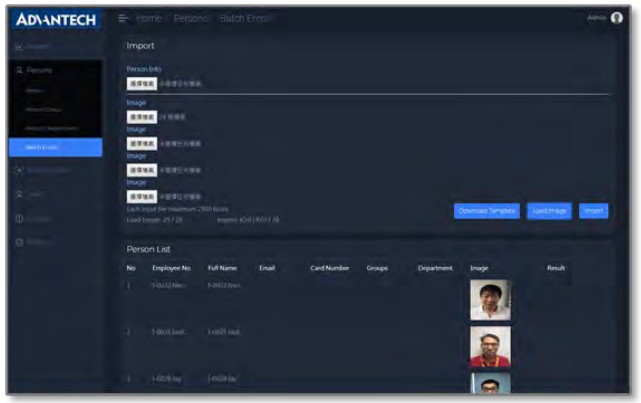
Video AI Facial Recognition Edge SRP Introduction



- Enroll face of registered person
- Group setting (Staff, Visitor, VIP, Blacklist…etc.)
- Recognized Report
- Real-time action configuration:
  I/O Control, Mail, Push Notification, HTTP Command

Capture Device

- Max. 50 Devices connected
- VFR Connect App provided
  (Win10 / Android)
- 2D Camera (720p or higher)

Web Portal

2

1

3

I/O Control Setting
(EX: Door/Alarm)

- Wiegand/Ethernet
- HTTP Controlled I/O Devices

IP Camera/NVR

- Max. 4 CH connected
- 1080p x 10 FPS @ 2Mbps
- By RTSP H.264 Streams

Video AI FR (VFR) Edge
(Core-i7/16GB/Ubuntu Linux)

- 20 faces recognized per second
- Min. face size: 100 x 100 pixels
- Accuracy:
  When FAR ≤ 0.01%, TAR is 95-97%

Integration API
(EX: Surveillance, Visitor Management)

- RESTful API
  - Create/Edit/Delete Person
  - Verify Face
- WebSocket
  - Real-time recognized result

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Location Attendance Taking at Building Front Door & Elevator

Register/Enroll

Capture/Recognized

Front Door

Elevator

Integrated Attendance Taking with Interactive Signage

- Employee Attendance Taking
- Integrate Access Control System
  - Face recognized to open door
- Interactive Digital Signage System
  - Display recognition result
  - Greeting for morning, afternoon and night
  - Weather information

iCity Kiosk Offering

Full Turnkey Kiosk Solutions – Indoor, Rugged Outdoor & Customization

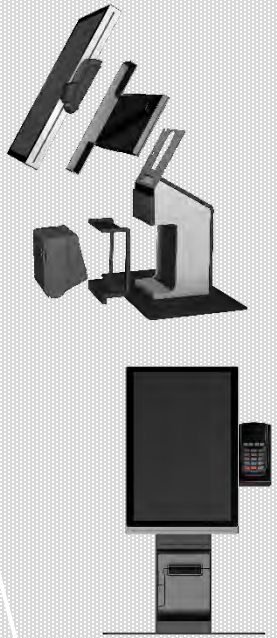
UTK-615

Mini Kiosk

Ultra-light

UTK-752

All-In-One
Compatible Kiosk



UTC-720 Series

Opened-Frame Kiosk

UTK-500 Series

Integration Kiosk

Integrated

UTK-932 Series

Rugged Outdoor Kiosk

Highly Customizable

iCity Kiosk Solutions

Scalability ← → **Customization**

Wide Screen All-In-One Panel PC Series Overview

UTC-500 Series
Ruggedized & Scalable

UTC-300 Series
Lightweight & Versatile

UTC-100 Series
Slim & Stylish

UTC-200 Series
Open Frame Solution

Ruggedized & Backend ← **Wide Screen** AIO Family → **Slim & Frontend**

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Infection Prevention Solution

AI Integrated System

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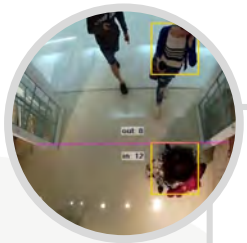
AI based Infection Prevention Solution Overview

1. Visitor Fever Screening System

Thermographic Smart Camera

Video AI Facial Recognition Edge

Fever Screening Manger

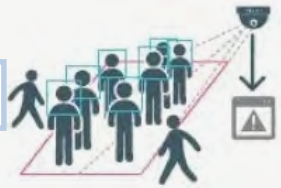


3. Occupancy Monitoring System

3D Counting Camera

Occupancy Status Display and Alarm

Person Screening


Location Monitoring

2. Infection Tracking System

Surveillance Camera/NVR

Video AI Facial Recognition Edge

Intelligent VMS

4. Social Distance Monitoring System

Surveillance Camera

Video AI Human Counting Edge

Intelligent VMS

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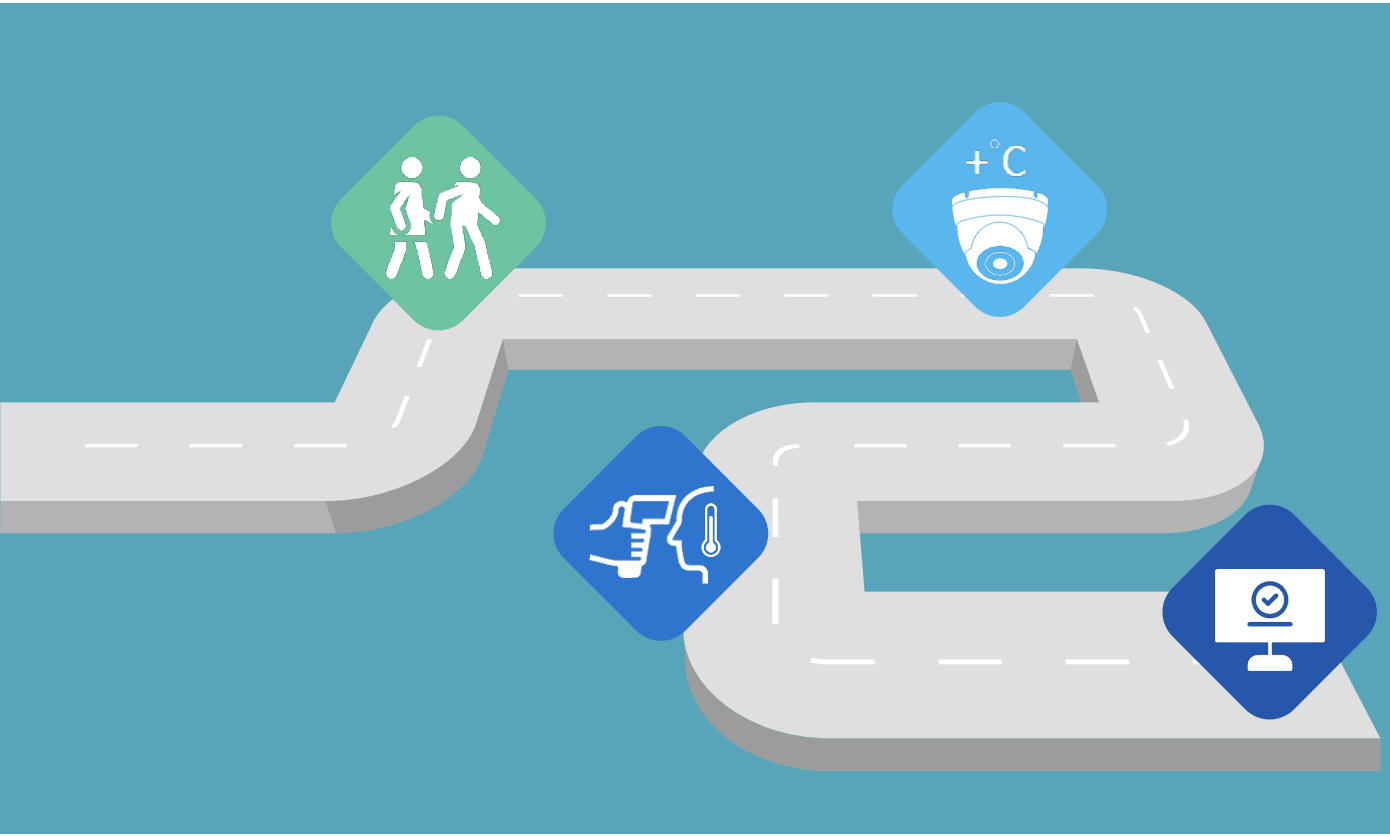
Visitor Fever Screening System

Thermographic Camera Technology

Any object with a temperature above absolute zero degree is constantly emitting amount of radiations. Thermographic camera converts IR radiation into gray value and calculate the thermal information through measurement algorithm model (temperature gray level curve) according to the corresponding relation between gray value and temperature.

Visitor Thermal Fever Screening Procedure

Advantech's visitor fever screening solution is using thermographic AI detection camera to measure human body temperature (non-contact method) and quickly find out individuals with abnormal temperature. Then the visitors screened with fever symptoms will be double confirmed by professional thermometer.



01 Visitor Screening Channel
Make sure all visitors are measured their body temperature

02 Thermographic Camera
Quickly screening crowded visitors with automatic alarm

03 Thermometer
Double check the screened visitors with high body temperature

04 Confirmation
Approve or Reject the visiting with system record

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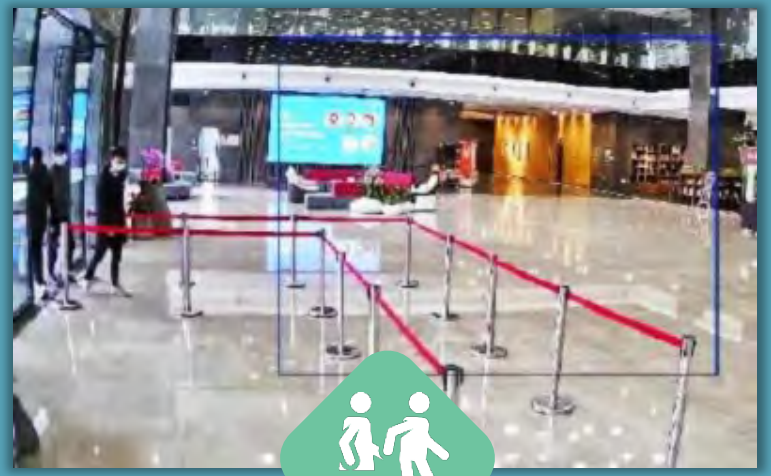
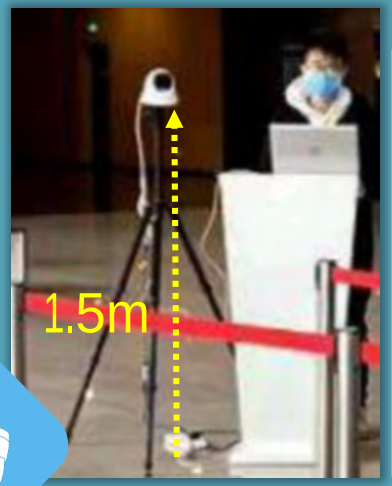
Visitor Fever Screening – System Installation





- The camera is recommended to install in **1.5~1.7m high**, keep the distance between the target and camera around **1~2.5m (Depend on camera model)**
- Suggest to Install in the indoor stable environment without wind

- Fever Monitor & Notification
- Screening Result Management

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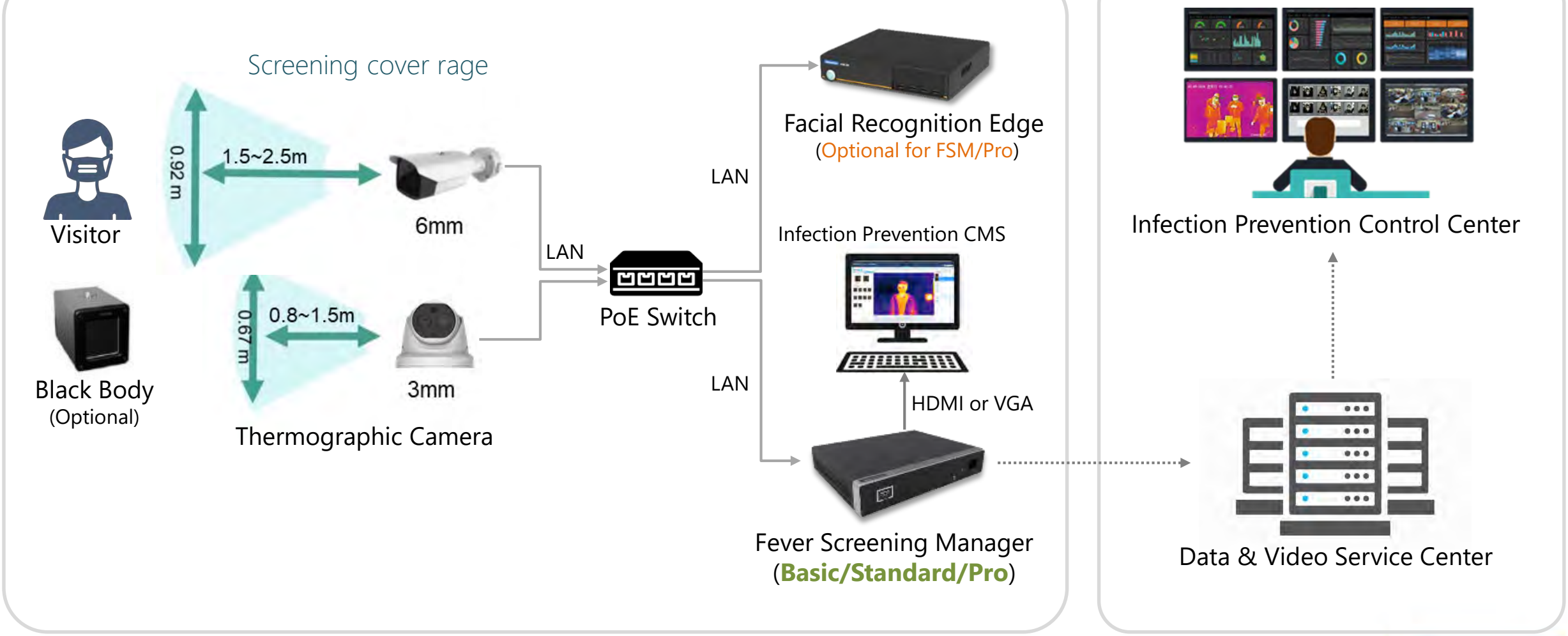
Visitor Fever Screening – System Architecture

Visitor Fever Screening Installation Site

Security & Management Department



Visitor Fever Screening – Thermographic Camera

Key Feature

- **AI Face Detection**
  Focus measurement areas on human face to reduce false alarms caused by other heat sources (such as teacups)
- **Bi-Spectrum Monitoring**
  Provide both thermal and optical image channels apart from temperature measurement
- **Strobe Light & Audio Alarm**
  Trigger alarms to notify operators immediately when a person with an elevated body temperature passed by

Turret Type

UCAM-220TT-U01
(Lens: 3mm)

Bullet Type

UCAM-220TB-U01
(Lens: 6mm)

Black Body

Hardware SPEC

Camera

- Thermal sensor resolution: 160 × 120
- Temperature range: 30°C to 45°C;
- Temperature accuracy:
  ± 0.5 °C
  ± 0.3 °C with black body
- Optical Max. resolution: 2688x1520
- Video format: H.265/H.264/MJPEG
- Up to 30 faces detection

Black Body

- Temperature resolution: 0.1°C
- Accuracy: ± 0.1 °C
- Effective emissivity: 0.97 ± 0.02

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Visitor Fever Screening – Fever Screening Manager

Fever Screen Manager Monitor

- Bundled Infection Prevention CMS - Fever Monitor
- Up to 4 channels camera monitoring
- +camaras
- THERMOGRAPHIC+MONITOR SW+PoE $ 6,500

Quick Checking in Entrance

Fever Screen Manager Standard

- THERMOGRAPHIC+STANDARD SW+PoE $ 7,000
- Bundled Infection Prevention CMS – Standard License
- Up to 4 channels camera monitoring/recording
  (video files are stored MicroSD Card inserted in camera slot)

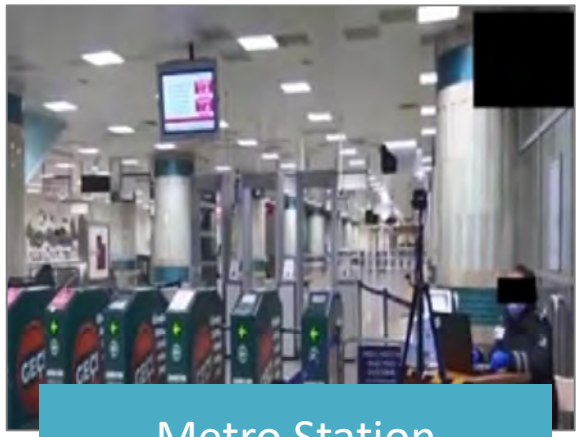
Checking and Manage the Event detected

Fever Screen Manager Pro

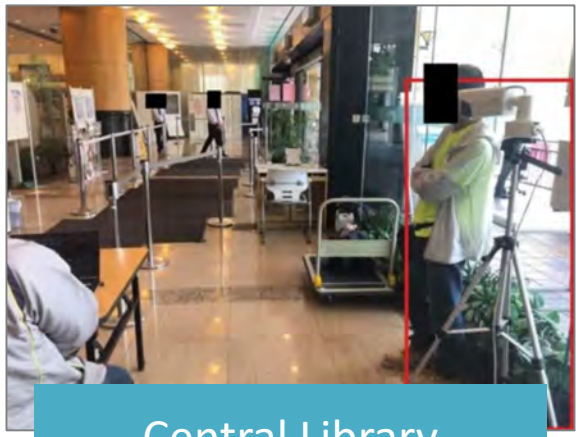
- THERMOGRAPHIC+PRO SW+PoE $ 7,500
- Bundled Infection Prevention CMS – Pro License
- Up to 4 channels camera monitoring/recording/recognition
- Working with Video AI Facial Recognition Edge
- THERMOGRAPHIC+PRO SW+PoE+AI FR $ 10,000

Checking and Manage the Event detected with Facial recognition

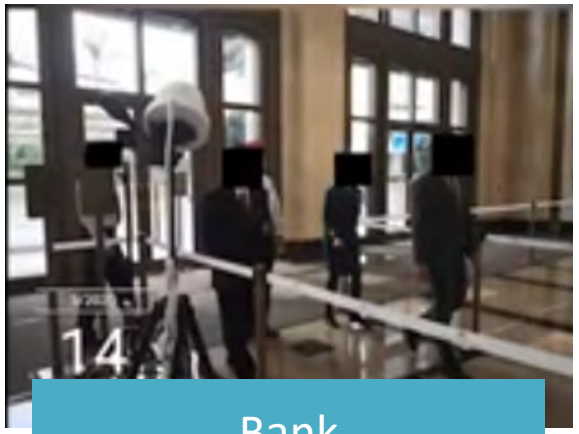
Visitor Fever Screening – Successful Cases



Metro Station

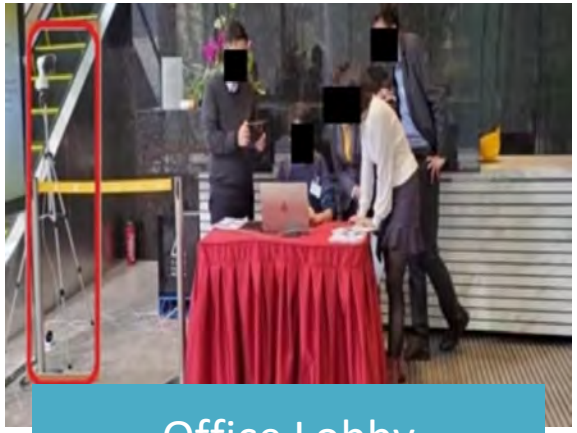


Central Library

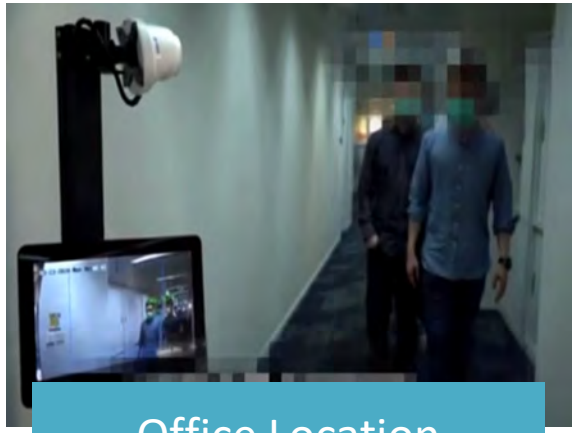


Bank

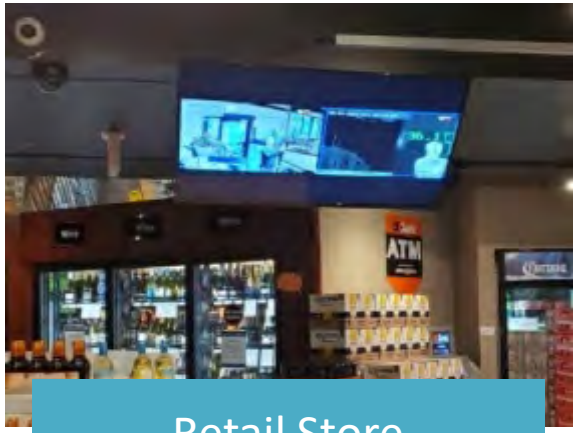
Hospital



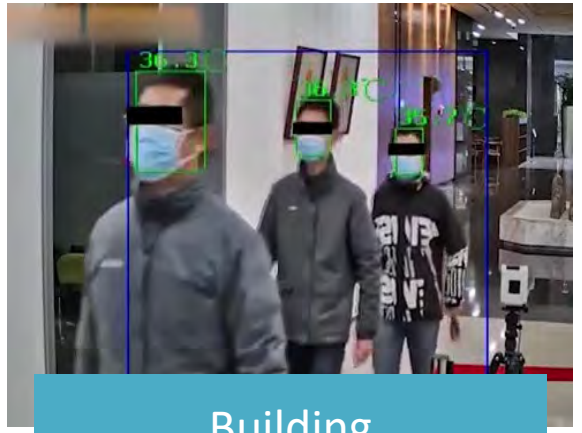
Office Lobby



Office Location



Retail Store



Building

ADVANTECH

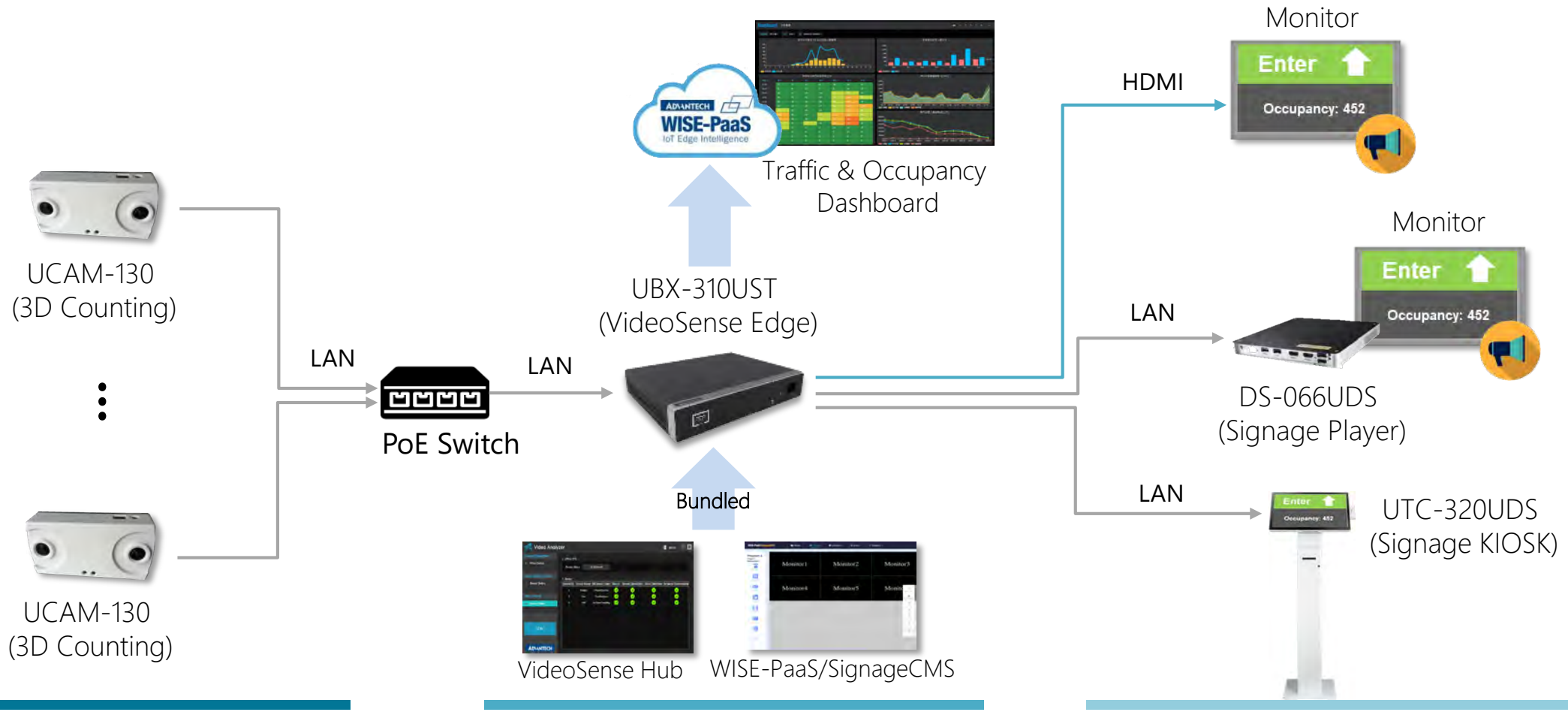
Occupancy Monitoring System

Occupancy Monitoring by Counting & Signage

- Count real-time occupancy in your building
- Integrated Signage display at your entrance to control incoming traffic
- Auto Guide Message or Sound Alert if capacity limit is breached
- Traffic Dashboard for further analysis

ADVANTECH

Occupancy Monitoring System – Solution Architecture



In/Out Counting for all doors of one monitoring location

1. Collect and process counting data for providing Occupancy status
2. Occupancy condition setting for Interactive Message (Enter/Stop) or sound alarm
3. Upload data to WISE-PaaS Cloud

1. Display Occupancy status
2. Display Interactive Message (Enter/Stop) or trigger the sound alarm

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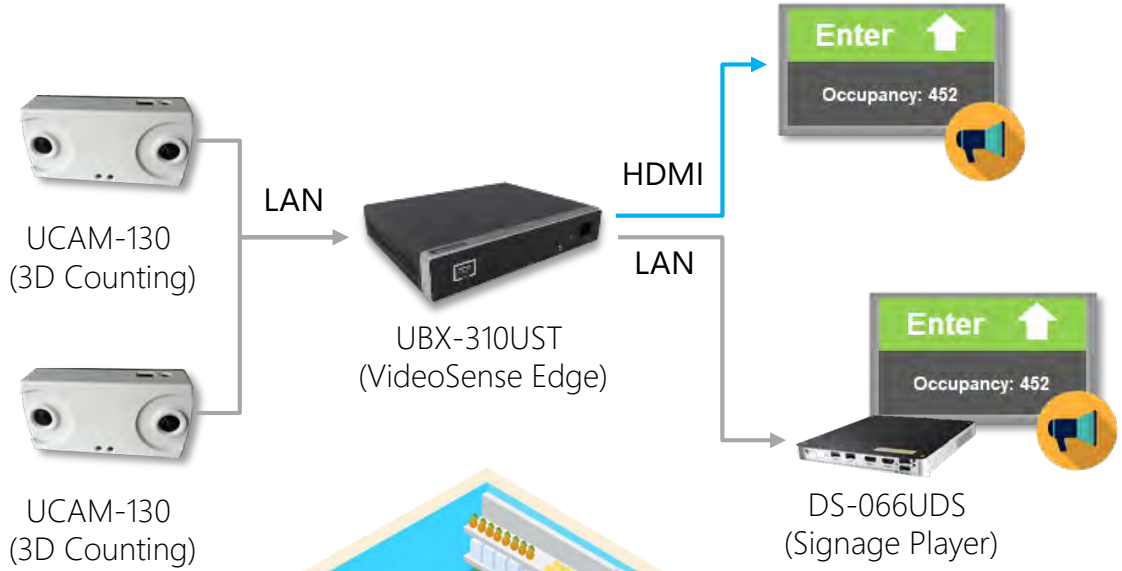
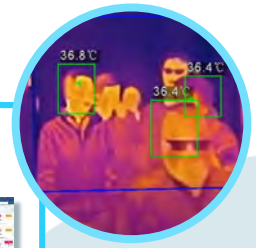
Occupancy Monitoring System – Installation Type



AI based Infection Prevention Solution Overview

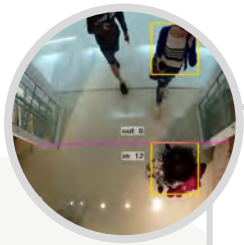


1. Visitor Fever Screening System

Thermographic Smart Camera

Video AI Facial Recognition Edge

Fever Screening Manger

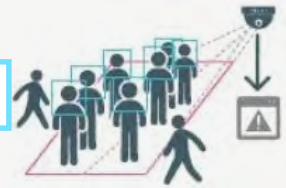


3. Occupancy Monitoring System

3D Counting Camera

Occupancy Status Display and Alarm

Person Screening



Location Monitoring

2. Infection Tracking System

Surveillance Camera/NVR

Video AI Facial Recognition Edge

Intelligent VMS

4. Social Distance Monitoring System

Surveillance Camera

Video AI Human Counting Edge

Intelligent VMS

ADVANTECH

Airport Scenario

Way Finding Terminal

- UTC-510/UTC-310
- UTC-515/UTC-315

USM server

Passenger Information System & DS Server

- UTC-542/UTC-532
- UTC-315
- USM & UBX

- UTC Series
- POS/BOX PC
- mPOS/Tablet

Customer Survey Terminal

- AIM-35/37/38

Self-Ordering Kiosk

- UTC-720/750

POS System

- UPOS & USC

eMenu Board

- UTC-510/UTC-310
- UTC-515/UTC-315

Digital Signage Server

- USM &UBX

GRACIAS!

THANKS!

Please contact:

Antonio.govela@ingrammicro.com