

CITY SURVEILLANCE SOLUTIONS



VIDEO SOLUTIONS BUILT FOR CITY SURVEILLANCE.

Presented by:



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Today's Agenda

Introductions
Who is Hanwha?
Cybersecurity
City Surveillance Issues
COVID-19 Solutions
Solutions Built for **City Surveillance**
AI & Analytics for UX
Integrations
Questions & Wrap-Up

- This webinar is being recorded and will be available for replaying. PDF will also be available.
- Please visit hanwhasecurity.com > training > webinars to view recorded webinars and sign up for future webinars.
- We will take Q&A time permitting. Please use Q&A section for any questions, and chat for any issues during the webinar.

Hanwha Group

Founded in 1952, Hanwha is a FORTUNE Global 500 company and the 8th largest business group in Korea, comprising 70 domestic affiliates and 325 global networks around the world.

Hanwha's businesses span chemicals & materials, aerospace & mechatronics, solar energy, finance, leisure & lifestyle, and construction. Through the integration of our growing number of affiliate enterprises worldwide, we are harnessing the power of sustainable, quality growth to continually increase the value we bring to our customers.



WHO IS Hanwha ?

- \$62B USD in Sales Revenue in 2019
- 68 Years of operation, founded in 1952
- Over 249 Global Areas of Operation
- #261 on the 2019 Fortune Global 500
- 635 R&D Engineers focused on security
 - Proprietary Chipset Development
 - Camera and Recording Solutions
 - Optics
 - Cyber Security

1991 - 2015



SAMSUNG
WISENET



2010: Wisenet



2011: Wisenet II



2013: Wisenet III

2016 - 2017



WISENET
SAMSUNG



- 2017: Wisenet 5
- 2M@60fps / 5M@30fps
 - H.264 + H.265
 - 150dB WDR
 - Advanced Analytics
 - Sound Classification
 - Statistical Analytics

2018+



WISENET



S-CERT & External Monitoring

Security Vulnerability Response Team
Monitoring via CVE, ICS-CERT, KISA



Hardening

Practical setup guide, detailed guide for 4 levels of security implementation



Disclosure

Security Vulnerability disclosure policy.
Clear and published policy for sharing vulnerabilities



Cyber Essentials

3rd Party accreditation
UK Government backed accreditation scheme



Other Certificates

TTA Public IP Camera Certificate
KISA Intelligent CCTV Solution Certificate



CYBERSECURITY

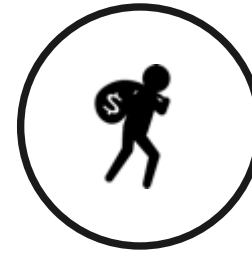


Issues in managing City Surveillance

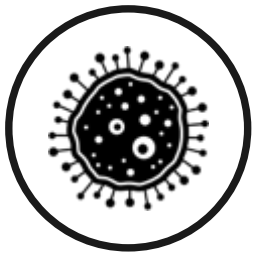
OPERATING SAFELY IN THE NEW NORMAL



CYBERSECURITY



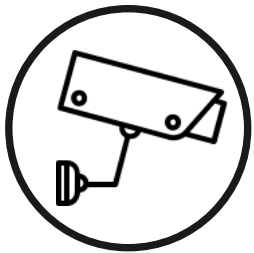
Violent Crimes/
Citizen Protection



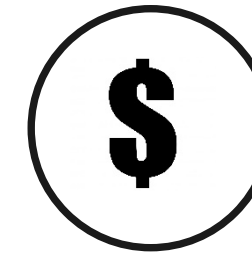
COVID-19



Live Monitoring of Events



PROTECTION OF
PROPERTY



BUDGET/Maintenance

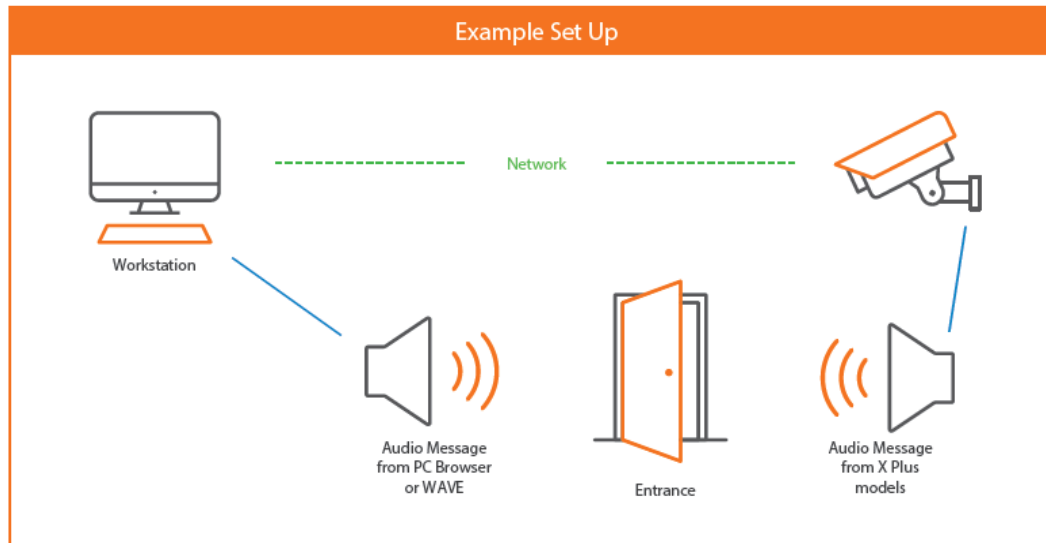
New World. New Solutions.

AI-based technology for mask detection,
occupancy monitoring and social distancing.





Face Mask Detection Demonstration with a Wisenet X series Camera



Face Mask Detection

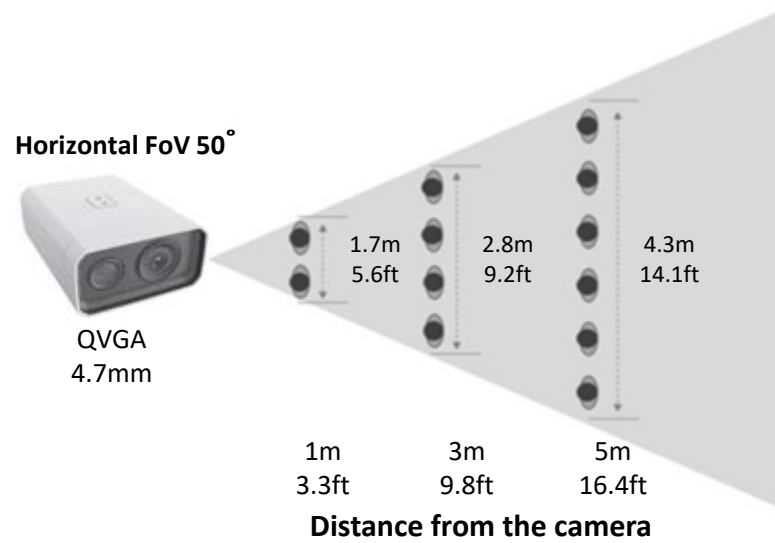
- Edge-based and simple
- Detect up to 4 people
- Alarm Out for alerting
- Records upon alarm
- Compatible with select X series, & P-AI series cameras
- Full WAVE integration
- One-time license



Elevated Body Temperature Detection

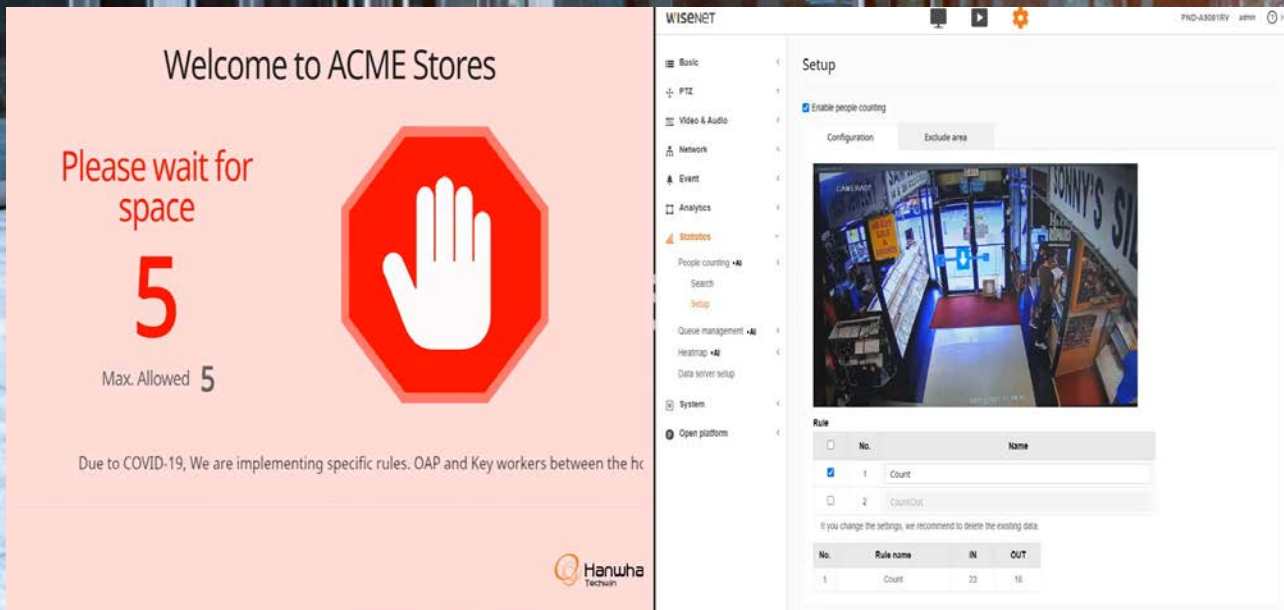
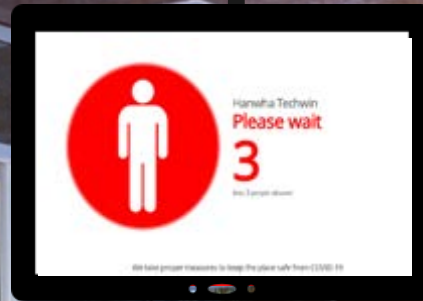
TNM-3620TDY

- Purpose built Bi-Spectral AI / Thermal
- Multi-person detection
- Accuracy within $\pm 0.54^{\circ}\text{F}$ w/ Blackbody, $.9^{\circ}$ w/o Blackbody
- Verification & identification of subject with visible camera
- In progress: FDA 510K Class 1



Occupancy Monitoring Application

- Easy to configure
- Connect up to 8 AI cameras
- Customized messaging
- Manual correction feature
- Alarm output to trigger lights, audio, door, etc..
- Combine with decoder, VMS, etc.
- Local reporting available



City Surveillance Solutions

Building/Bridge/Traffic/Pedestrian Cameras

Dome Camera

X series 5 MP Varifocal lens with 150DB WDR,analytics, PTRZ



Lowlight series

X series 2MP w/ V/F lens,analytics, PTRZ, WDR, .004LUX color



Stainless Steel Cameras

X series Stainless housing for bridges/tunnels 2mp/5mp, analytics,& PTZ



Outdoor PTZ Camera

Massive 55x optical zoom and IR capable of seeing up to 1,640ft. Perfect solution for large and open areas



THERMALS

VGA/ QVGA Bullets

WN5 chip for long range detection, analytics/ radiometric capabilities



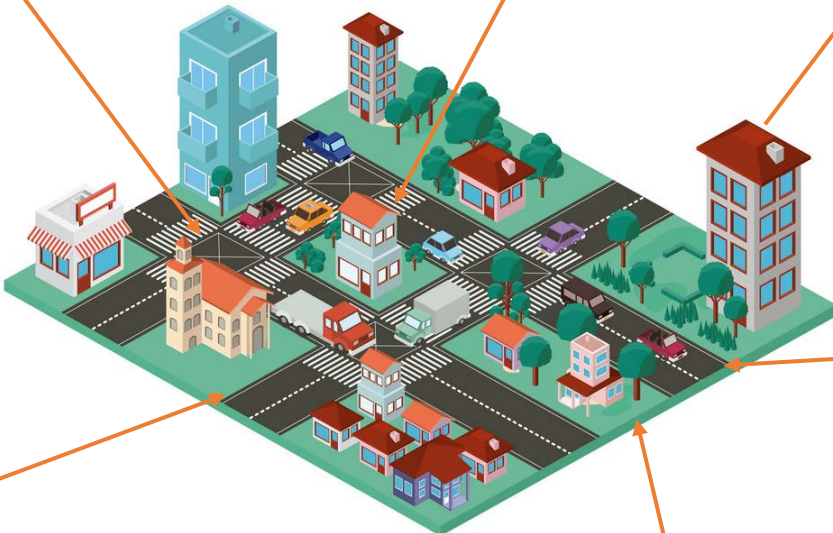
AI CAMERAS

Indoor/Outdoor AI Dome/Bullet/Box Camera

4K AI camera with advanced video analytics based on AI. Sound classification (scream and gunshot) best shot AI for person, face, vehicle and license plate



PNV-A9081R
PND-A9081RV
PNB-A9001
PNO-A9081R



MULTI-SENSORS

PTRZ Multi Sensor Camera

8MP/20MP multi sensor & multi directional PTRZ camera W/IR



PNM-9084/5RQZ

Outdoor Multi Directional Camera

Outdoor multi-sensor multi-directional camera with 4 2/5MP fixed cameras and a 2MP 32X optical zoom PTZ



PNM-9320VQP

Dual Head Camera

View multiple important angles in complete clarity with 2 independently connected 2mp cameras in 1 housing



PNM-7000/9000VD

180 Panoramic Camera

7.3/15MP panoramic image, stitched for overall view



PNM-9020V/9030V

Security Command Center

Video Management Software

WAVE VMS platform for managing video over multiple sites and facilities



Wisenet WAVE

Wave Servers and Tower

This small form factor appliance is pre-installed with the WAVE VMS software. This can be used for smaller systems and patient observation applications



Wisenet WAVE NVRs / Servers

Wave POE+ Recorders

8/16 channel NVR solution with 8/16 POE/POE+ ports that support 4K UHD resolution and 24TB



WRN-1610S
WRN-810S

Specialty Cameras

LPR Camera

Low speed LPR (License plate recognition) camera. For parking lots, entry gates, lobby drive up and emergency room.



XNO-6120R/LPR

DETENTION GRADE Camera

Corner mount non-ligature camera for behavioral and psych areas with built in microphone and audio analytics



TNV-7010RC



Hanwha Camera Line-up

Feature Comparison

Features	WiseNET HD+	WiseNET L	WiseNET Q	WiseNET T	WiseNET X	WiseNET P
Resolution	2MP/4MP	2MP	2MP-5MP	VGA-5MP	2MP-5MP	7.3MP and higher
Wide Dynamic Range	60dB / 120dB ¹	120dB	120dB	150dB ¹	150dB ¹	120dB ¹
H.265 codec	NA	No	Yes	Yes ¹	Yes	Yes
WiseStream	NA	Yes	Yes	Yes ¹	Yes	Yes ¹
Hallway view	No	Yes	Yes ¹	Yes ¹	Yes ¹	Yes ¹
Intelligent Video Analytics	No	No	Yes ¹	Yes	Yes	Yes
SD card slot	NA	Yes	Yes	Yes	Yes (Dual ¹)	Yes
Simple focus	Yes ¹	No	Yes ¹	Yes ¹	Yes ¹	Yes ¹
Defocus Detection	No	No	Yes	Yes ¹	Yes	Yes ¹



Multi-Sensors for City Surveillance

2, 4 & 5 Sensor Models

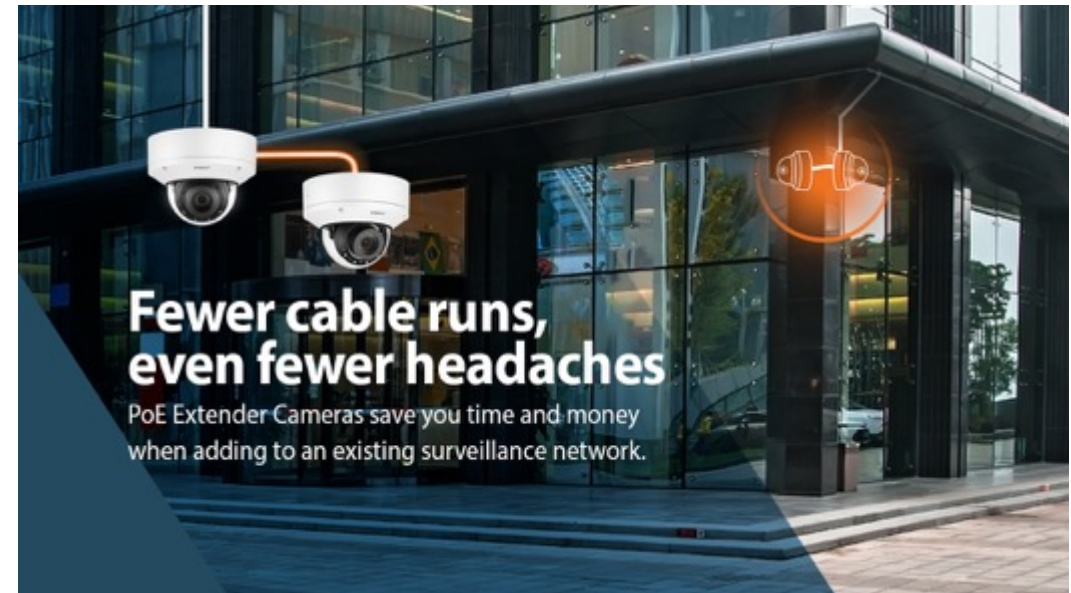


- Use one camera to replace many
- 2MP/5MP options
- PTRZ in select models
- Commonly uses one VMS license
- Save on network drops
- Perfect for corner mount on buildings, parking lots, light poles, traffic pole- Indoor/Outdoor

PoE Extender Camera

Pushing the boundaries of traditional video

- PoE+ powered Extender Cameras can connect downstream PoE devices including cameras, sensors, intercoms, lights, and more.
- Built-in switch in the camera can extend PoE and data for up to 262 feet for infrastructure savings.



License Plate Recognition System



- XNO-6120R/XNV-6120R Camera with LPR Application pre-loaded and license activated
- Choice of bullet and vandal dome camera for suitable installation type
- LPR recognition system for low speed parking lots, gates and entry points



PTZs

Active Surveillance Tools

- IP and HD Analog PTZ
- 4.3x - 55x zoom
- IR models for long range night viewing
- PTZ handover, alarm inputs
- Ultra-compact form factor
- In-ceiling flush mount options
- Compatible with legacy control systems



How AI Changes Everything

ACCURATE DETECTION

- High confidence in alarms for alerts or storage
- Gateway to more practical cloud and hybrid architectures

EFFICIENT FORENSIC SEARCH

- Attribute to allow metadata to power super-efficient search

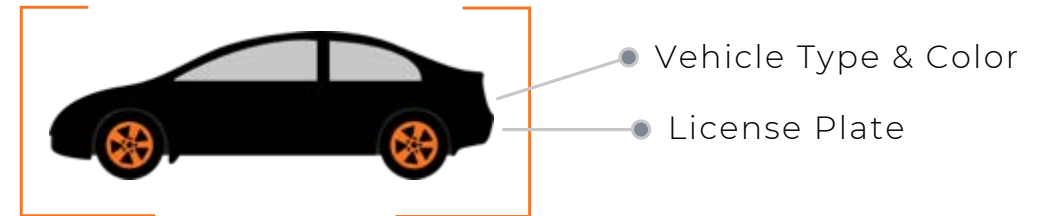
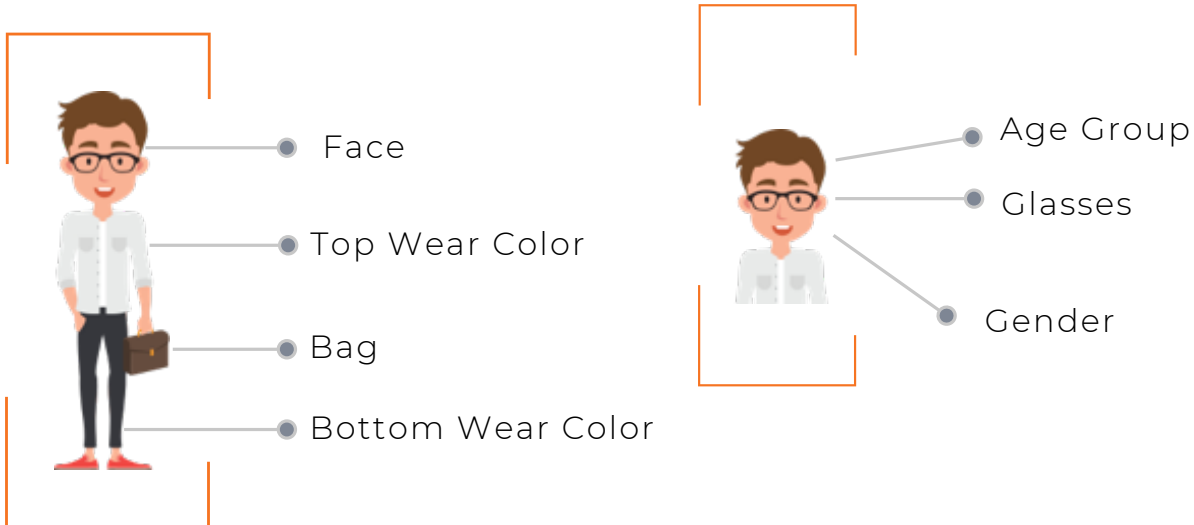
SENSOR VERSATILITY

- Use a FOV for analytics that is also practical surveillance FOV

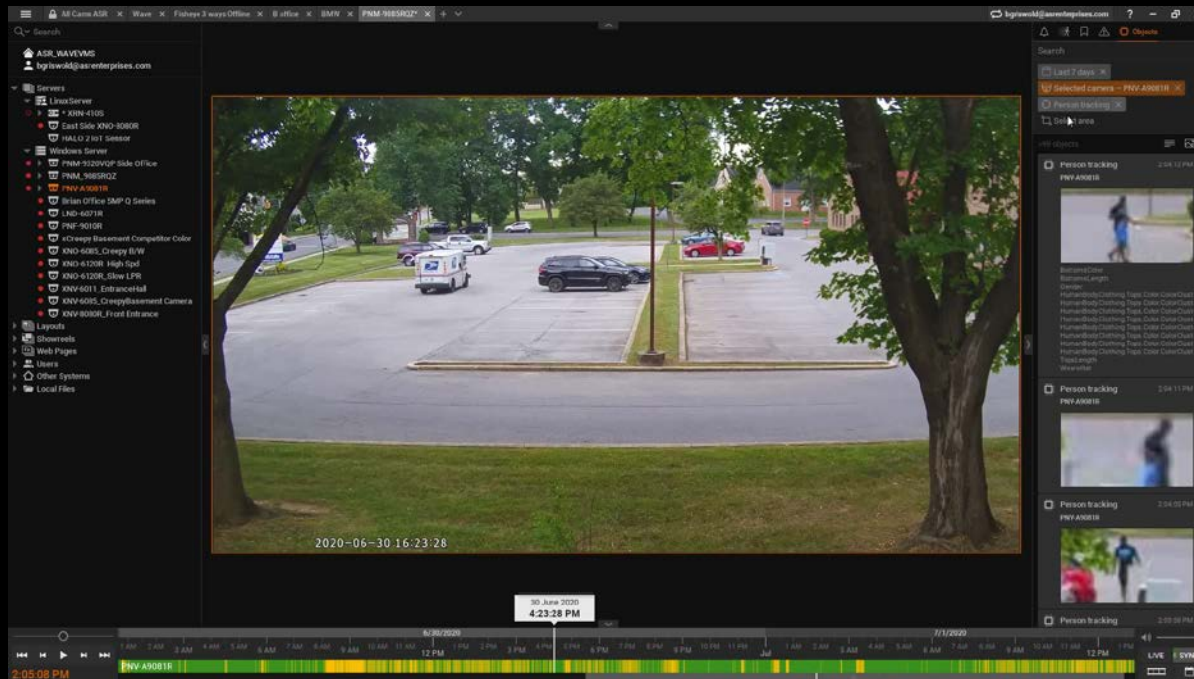
AI Cameras - P-Series

Edge based artificial intelligence

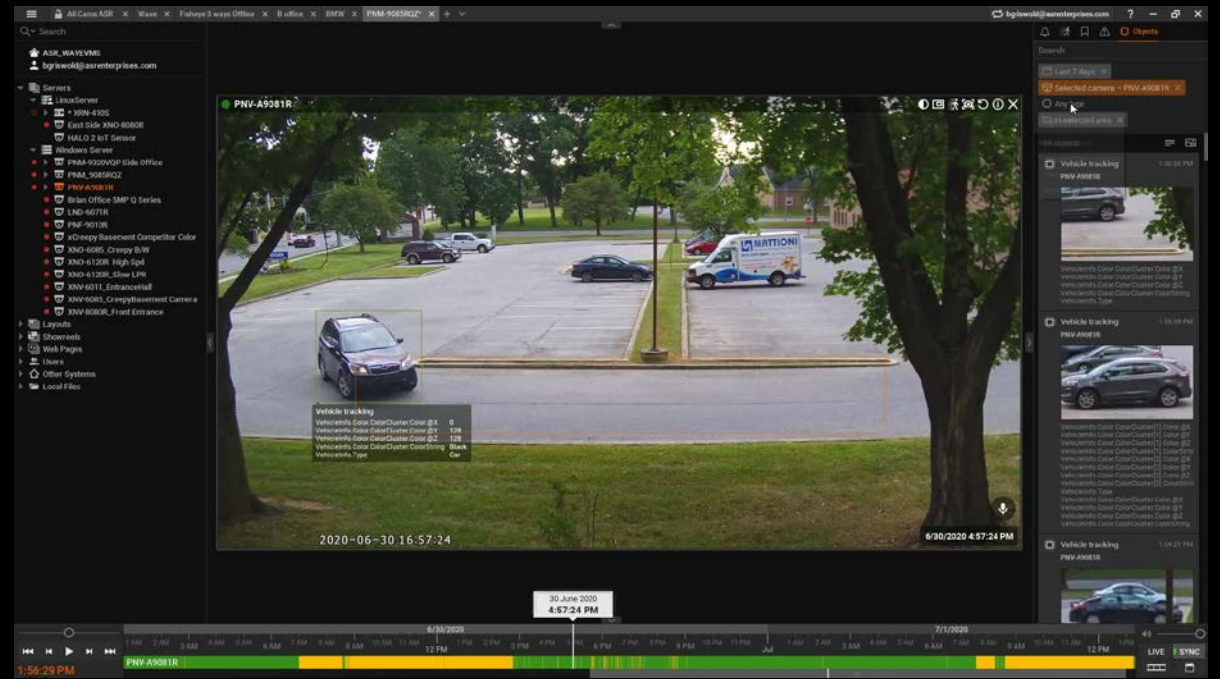
- 4K resolution, 4.5~10mm Motorized V/F, H.265, 120dB WDR
- Built-in-AI: Object classification and attribute extraction
- Modular design (X-Plus)
- Plug-ins to Genetec, Milestone, & WAVE



AI SEARCH IN WAVE



Scenario #1 - Person Attribute Search



Scenario #2 - Vehicle Search

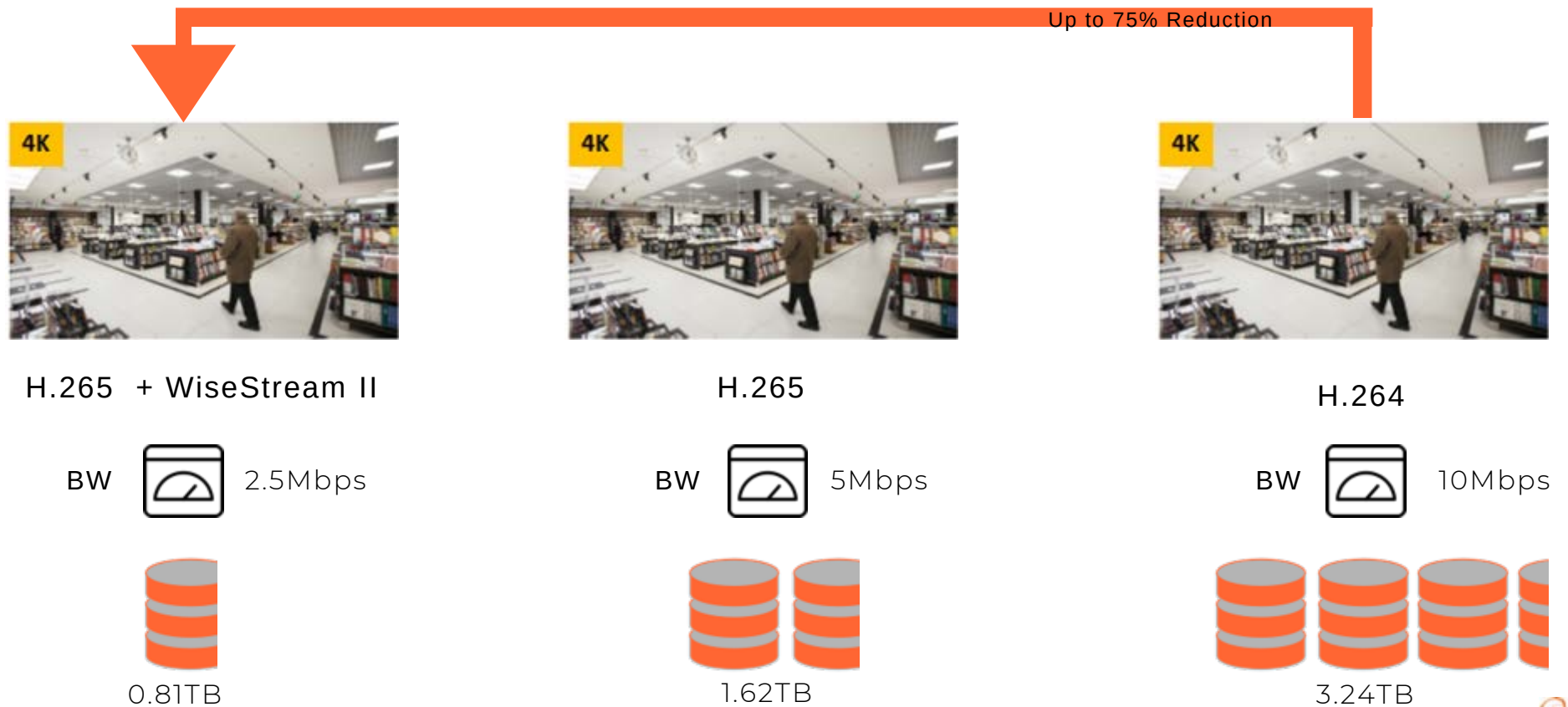
X Series Hanwha Cameras for Citywide Surveillance

X series Dome Cameras

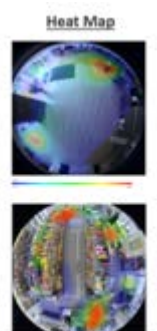
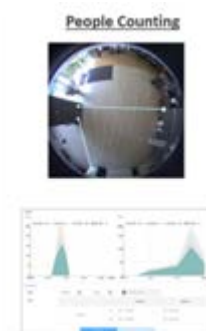
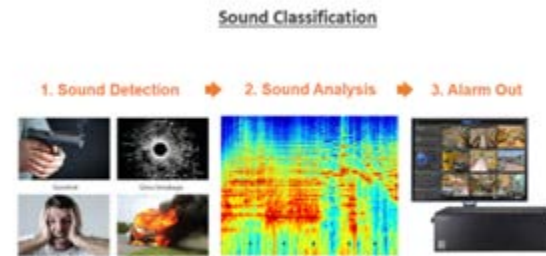
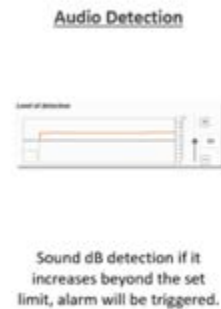
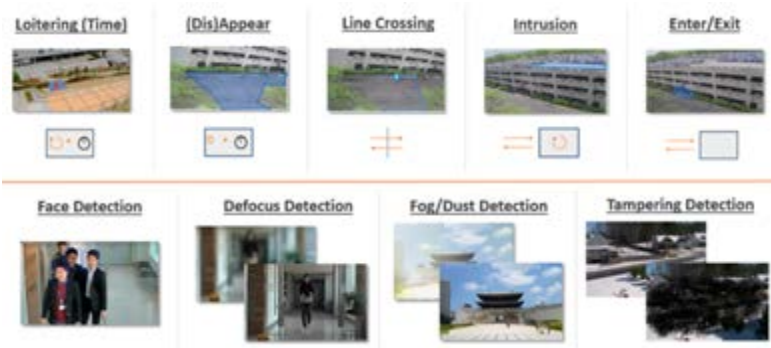
- 2 & 5 MP Technology
- Remote USB installation
- Enhanced video analytics
- Sound Classification (Scream and Gunshot)
- People Counting and Heatmap Function
- Audio Playback on Event
- Modular Design (X Plus Line)



H.265 - HIGH EFFICIENCY VIDEO ENCODING



LICENSE FREE ANALYTICS



EDGE-BASED VIDEO ANALYTICS

License free analytics enable enhanced UX

AUDIO ANALYTICS

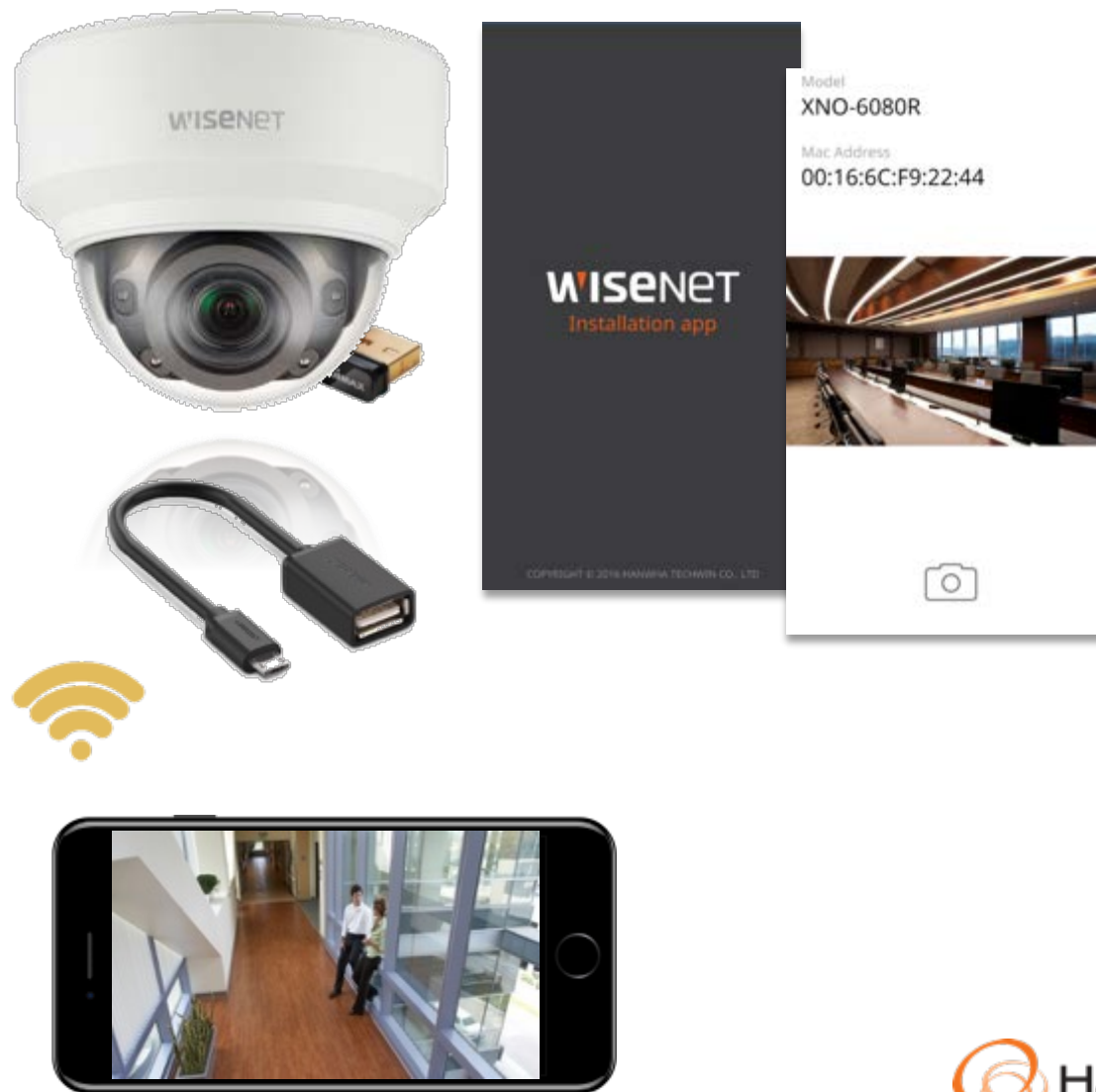
Trigger event-based alarms based on sound classification analytics.

BUSINESS STATISTICAL ANALYTICS

Gain deeper insight into facility's foot traffic

• Easy Setup with USB Wi-Fi Adapter

- Wisenet X series saves your time and money while installing the camera by supporting Wi-Fi video transmission with a USB adapter. View live streaming video to easily adjust camera lens while installing the camera without the need for a laptop or unplugging the network cable.
- Mobile app features include:
 - Live view with audio
 - Lens zoom and focus control, PTRZ control
 - Flip/mirror/hallway view
 - Snapshot



Note: Wi-Fi dongle and microUSB OTG cable is required (not included).

WAVE VMS

Video Management

- OS Flexibility- Windows, Linux, Mac
- User Friendly
- One-time licensing- no hidden fees
- Free failover
- Events & Rules Engine
- Access from anywhere
- Smart Search
- Advanced Integration
- Rack, Tower, NVR form factors



WAVE Sync

A cloud-based service that enables simple, centralized remote access and insight into any Wisenet WAVE system.



Desktop

A rich media player designed to view and manage a single Wisenet WAVE system from a desktop or laptop PC.



Mobile

A mobile app designed for viewing Wisenet WAVE system video and archives while on-the-go.



Server

A media server responsible for discovering, connecting to, and managing system devices and data.



WRN Series POE Recorders

Network Video Recorders

- Full WAVE Server
- 8, 16 Channel PoE NVRs
- Linux based
- ONVIF Support
- H.265, H.264, MJPEG codecs
- Merge with Larger systems
- Includes 4 Pro licenses

3RD PARTY VMS INTEGRATION

VMS PARTNERS

ECO SYSTEM APPROACH

PROACTIVE STRATEGY

UNIFIED API FOR FAST & RELIABLE INTEGRATION

(SUNAPI)

OPEN STANDARD ONVIF COMPLIANT



QUESTIONS?

US HEADQUARTERS

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