WISENET

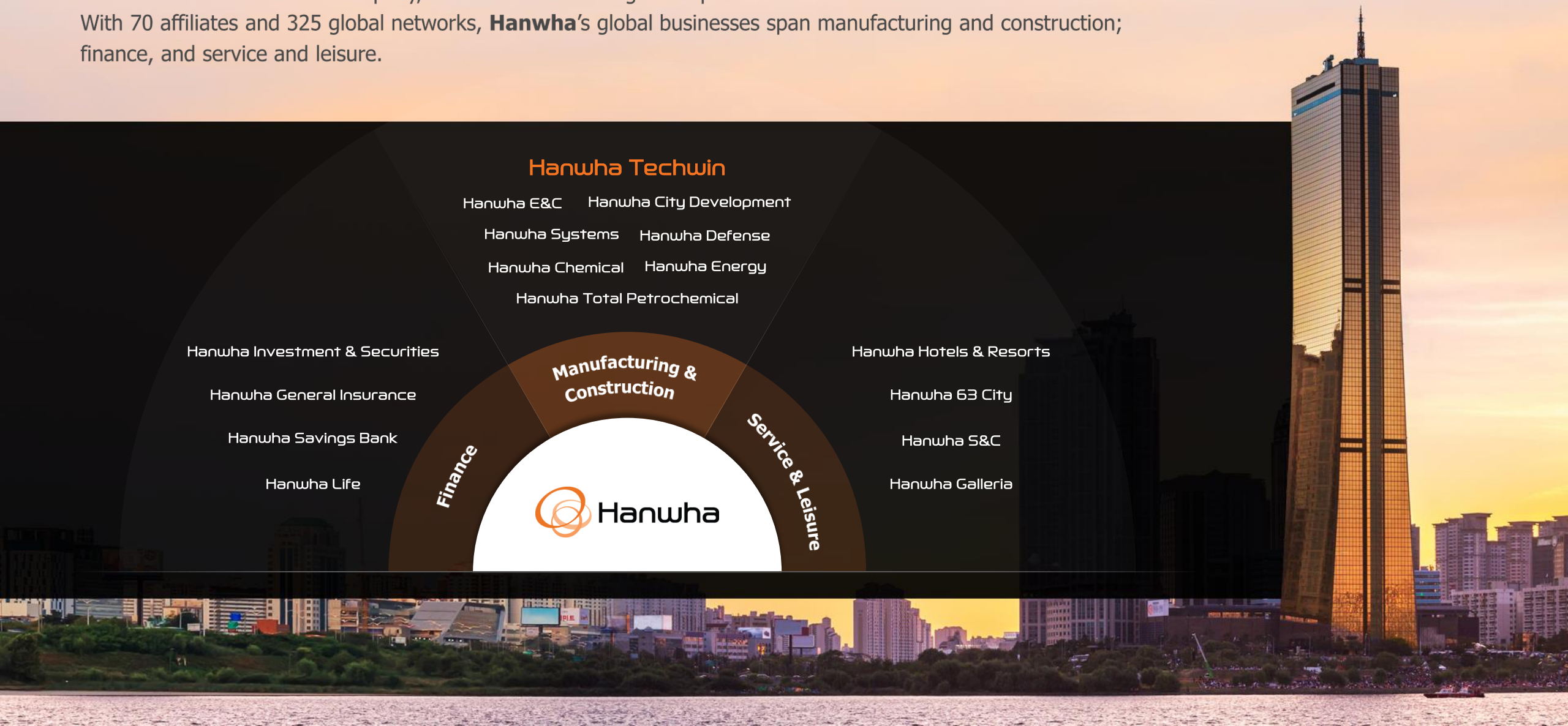
Smart solutions

Hanwha Techwin

Hanwha Group

Hanwha Techwin

Hanwha is a Fortune 500 company, ranked as the 8th largest corporation in South Korea based on asset size. With 70 affiliates and 325 global networks, **Hanwha**'s global businesses span manufacturing and construction; finance, and service and leisure.

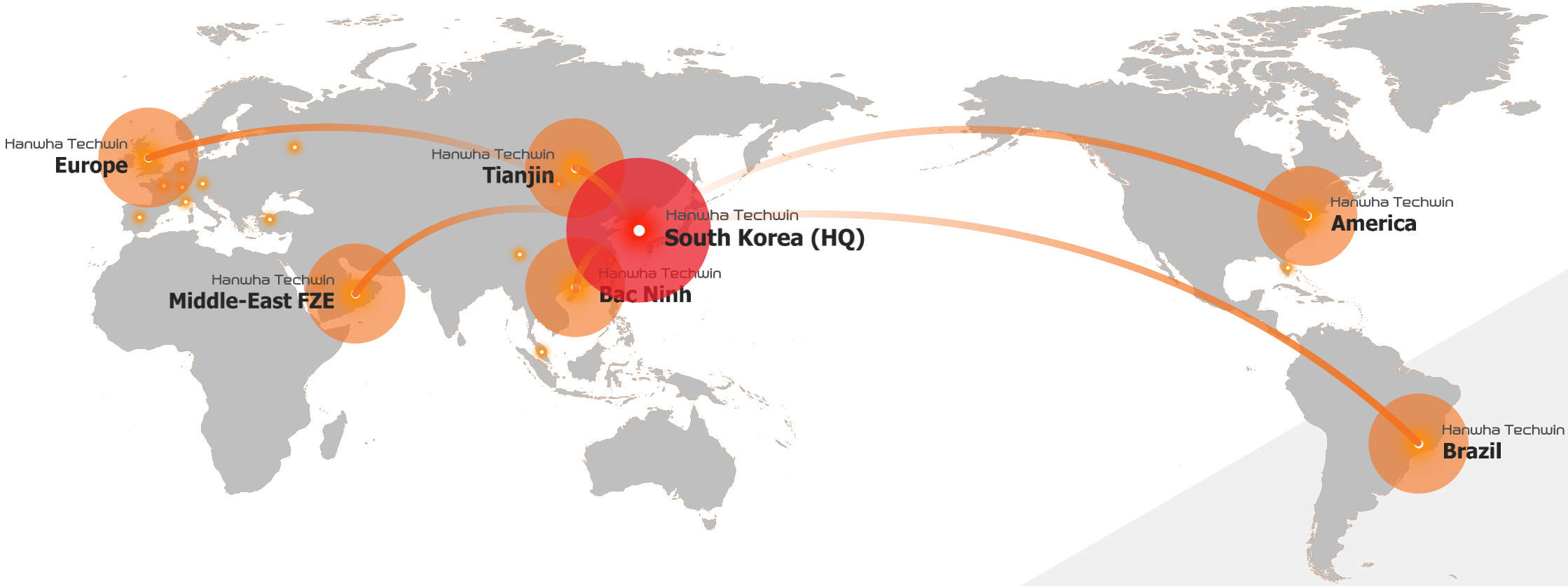


Global Network

Hanwha Techwin based in South Korea for security R&D and production, produces hi-tech video surveillance devices with its network expanding globally. Through its endless innovation and continuous growth, Hanwha Techwin strives to become a global leader in video surveillance.

Worldwide Business Network of

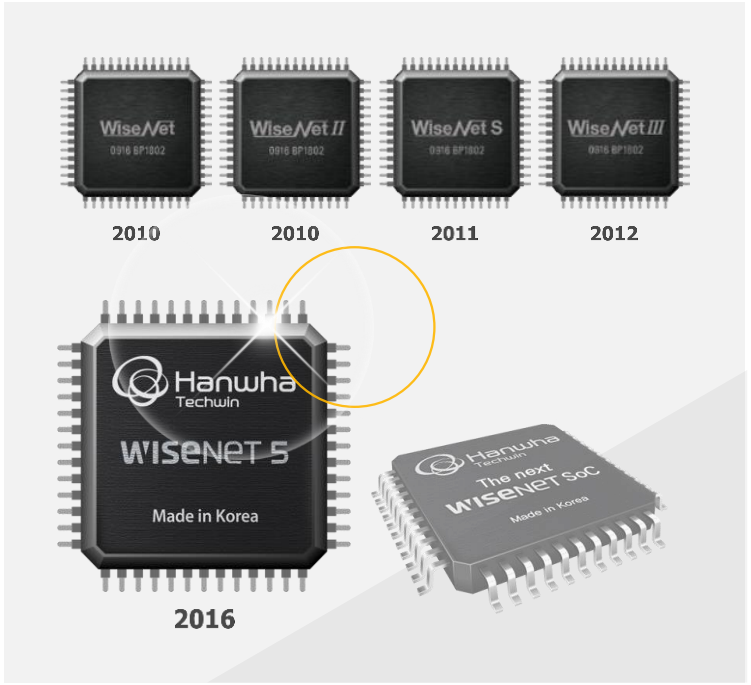
900 Clients and 5,000 Partners in 120 Countries



Warranty

Hanwha Techwin products have standard 3 years warranty for everyone and for our best partners we offer extended 5 years warranty.

Core Technologies



Optical Design and Image Processing Technologies

Based on world class optical and image processing technologies, Wisenet provides high precision & resolution cameras.

SoC Design Technology

Outstanding level of SoC design capabilities evident in our Wisenet 5 SoC is equipped with diverse analytics technologies.

Intelligent Analytics

Hanwha Techwin provides exclusive solutions for intelligent analysis thanks to its unique analysis algorithms.

Cyber Security

Hanwha Techwin operates a security vulnerability response team (S-CERT) to prevent illegal and unauthorized security breaches from external sources and internal security flaws.

WISENET Product Line-up

Hanwha Techwin

X series

Versatile

Extreme Performance

Q series

Quality

Quality Entry Level

WISENET

P series

Premium

4K
Multi Sensor
Fisheye

T series

Vertical

Explosion Proof
Positioning
Thermal

WISENET Product Line-up

Hanwha Techwin

HD+ series

HD Analog

4MP & 2MP High Definition

Video Recorders

NVR & DVR

PC-Based NVR
Linux Embedded NVR & DVR

WISENET

Video Management Software

One-stop Management Software to configure all network products of Hanwha

SSM

Recording Software

Open platform
Easy to use
High performance and stability

Wave

WISENET

X series

Hanwha Techwin

Defining the New Standard of Excellence

The Most Powerful Chipset Wisenet 5

The Wisenet X series is supercharged by the most powerful chipset ever incorporated into a full camera range. The Wisenet 5 chip uses a new architecture that enables faster processing. That means you get the best video performance just as you need it.

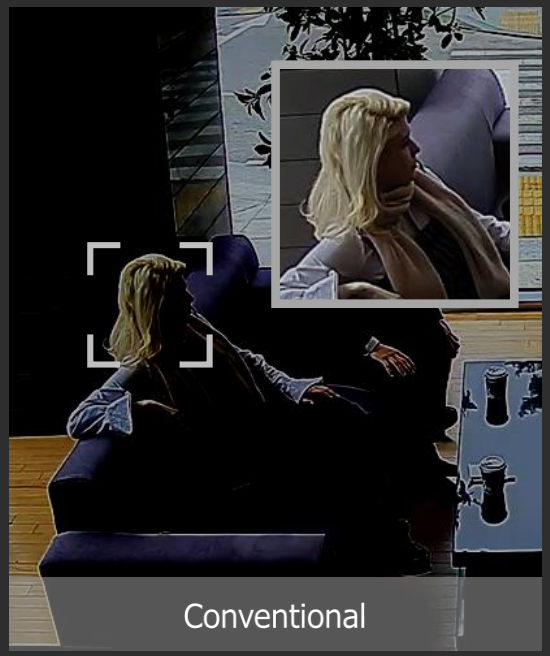
WISENET

X series

Hanwha Techwin

True WDR Performance(150dB)

Even with backlight, Wisenet's cutting-edge WDR technology improves the accuracy of an image by compensating differences in brightness.

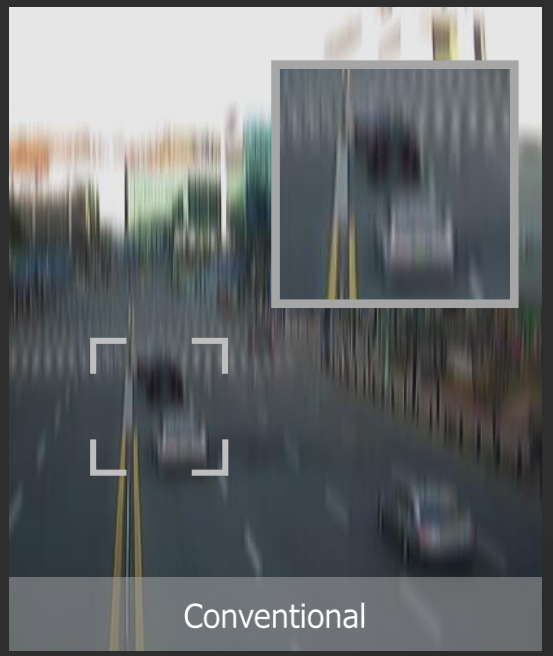


Conventional

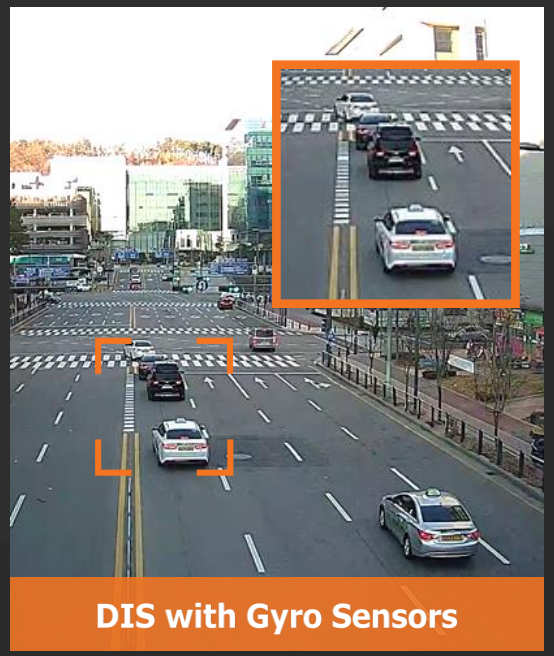
WDR 150dB

Digital Image Stabilization(DIS) with Built-in Gyro Sensors

Advances in the Wisenet image stabilization technology drastically reduce motion blur caused by wind or vibration.



Conventional



DIS with Gyro Sensors

WISENET

Hanwha Techwin

X series

Clearer & Colored Images even in Low Light Environments

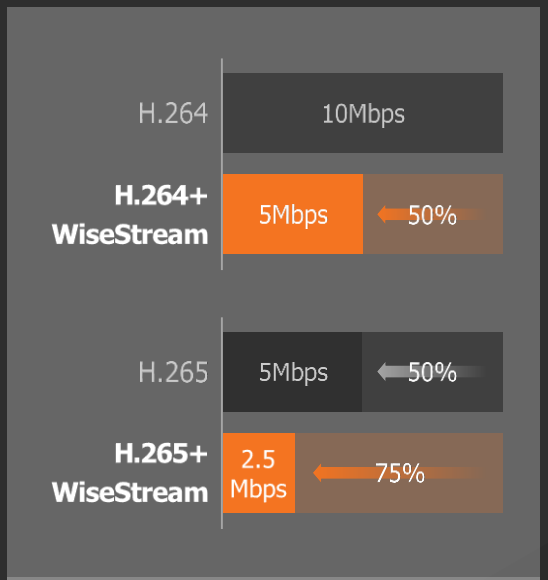
The Wisenet X series achieves optimal performance in low-light conditions by producing crystal-clear images regardless of the environment or time of day.

Conventional

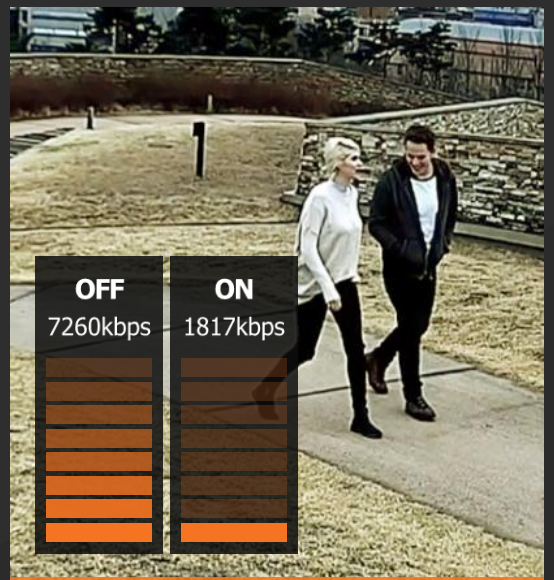
extraLUX

Improve Bandwidth by Using WiseStream II

The advanced compression technology can improve bandwidth efficiency and reduce the system cost while still maintaining high quality.



Reduction 75% Compared to H.264



WiseStream II

WISENET

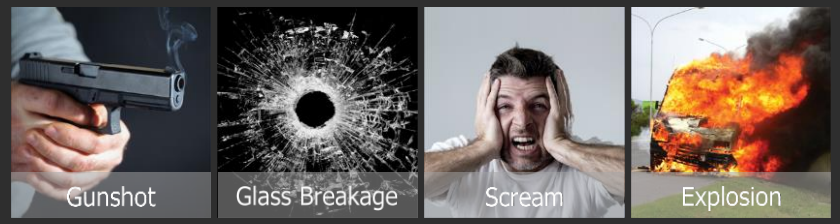
Hanwha Techwin

X series

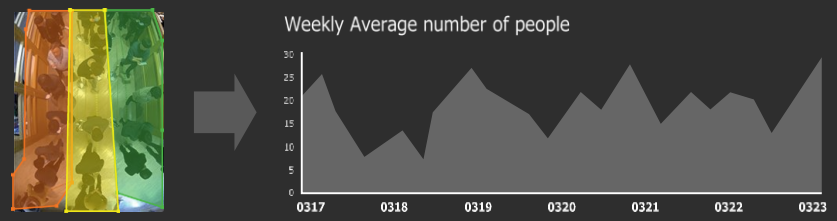
Enhanced Video / Audio Analytics

A variety of exclusive video and audio analytics provide enhanced monitoring solutions and market intelligence.

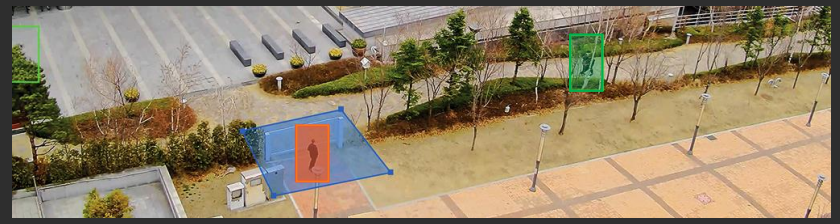
Sound Classification



Retail analytics



Security analytics



Handover to PTZ

A PTZ camera can receive an alarm from Wisenet X series cameras operating on the same IP video surveillance system and zoom into the assigned pre-set location.

More Convenient Installation with USB

The Wisenet X series can connect cameras and mobile devices through USB and Wi-Fi.

WISENET

X series

- Max. 5MP & 2MP resolution
- Max. 60fps at 2MP, Max. 30fps at 5MP
- WDR 150dB at 2MP, 120dB at 5MP
- H.265 / H.264 / MJPEG, WiseStream II
- DIS & Shock detection with gyro sensor
- Advanced Video & Audio Analytics
- Modular Design, Motorized PTRZ
- Playback audio on event

XND-6081FZ/8080FZ

XNV-6081Z/8081Z

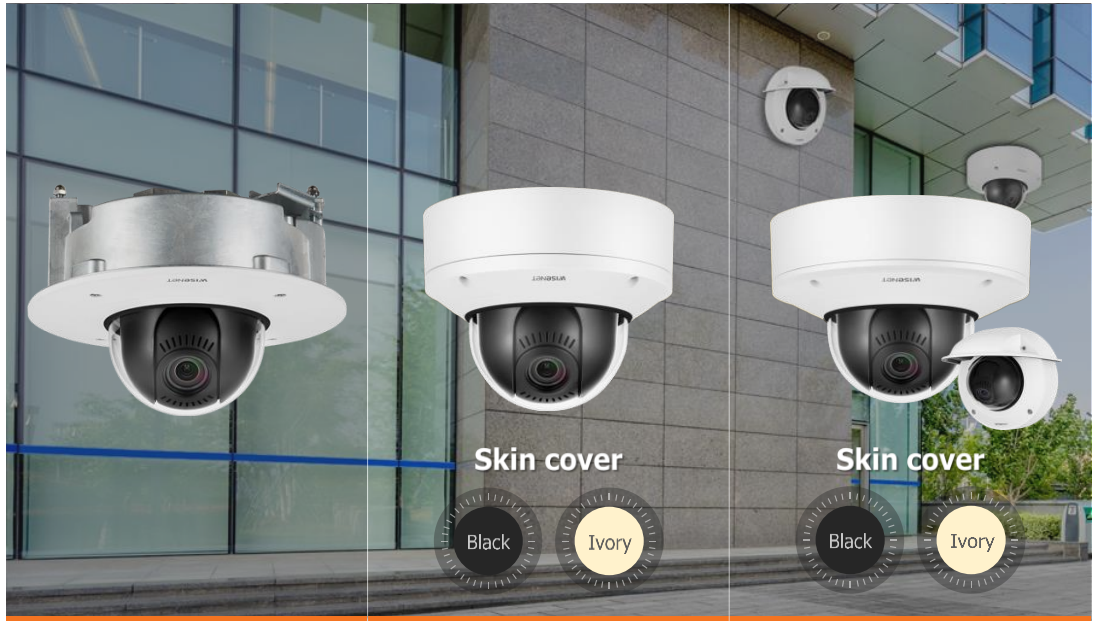
XND-6081VZ/8081VZ

Hanwha Techwin

X PLUS Cameras

Easy Installation with Modular Structure

The X Plus cameras feature a modular design that makes installation simpler than ever. With extended tilt range, DIS & shock detection with gyro sensors, optional skin covers, and motorized PTRZ, you will soon discover why this is one of the most versatile camera lines on the market.



Flush | **Indoor Vandal** | **Outdoor Vandal**

WISENET

X series

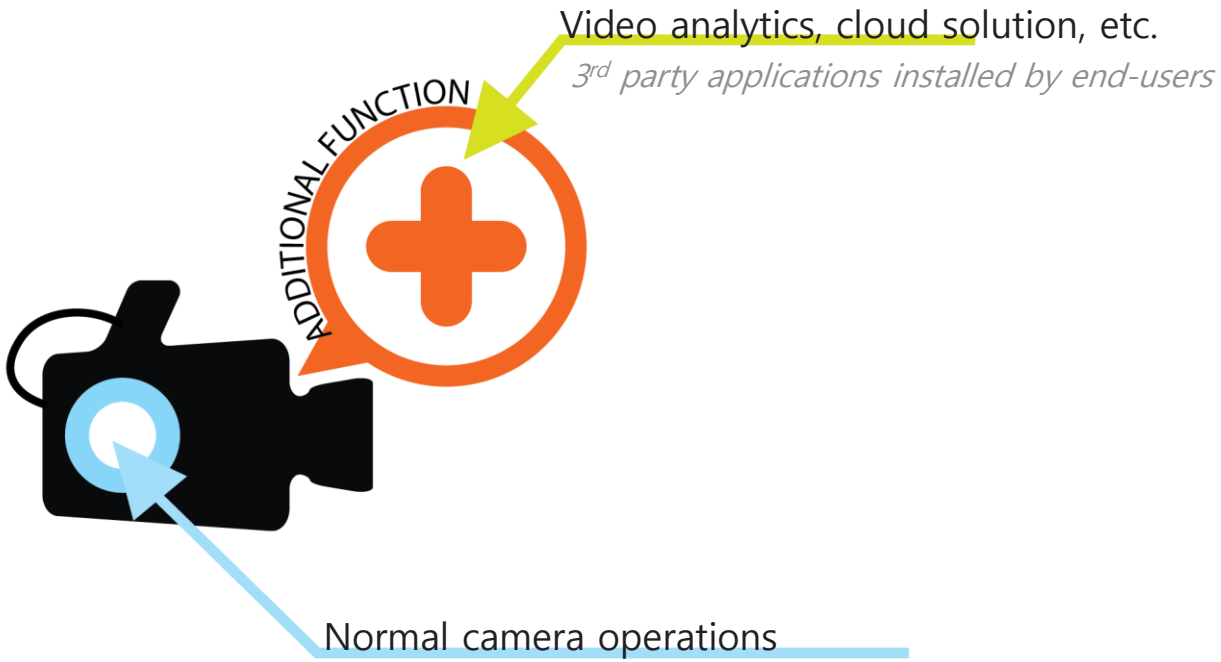
- Run multiple applications simultaneously.
- Normal camera operations are not affected.
- Maximize the value of the camera through edge

Hanwha Techwin

X PLUS Cameras

Open Platform

The X Plus cameras feature a modular design that makes installation simpler than ever. With extended tilt range, DIS & shock detection with gyro sensors, optional skin covers, and motorized PTRZ, you will soon discover why this is one of the most versatile camera lines on the market.



WISENET

X series

A.I. Tech
The Vision of the future. Now.

FACIT DATA SYSTEMS

numberok EDGE

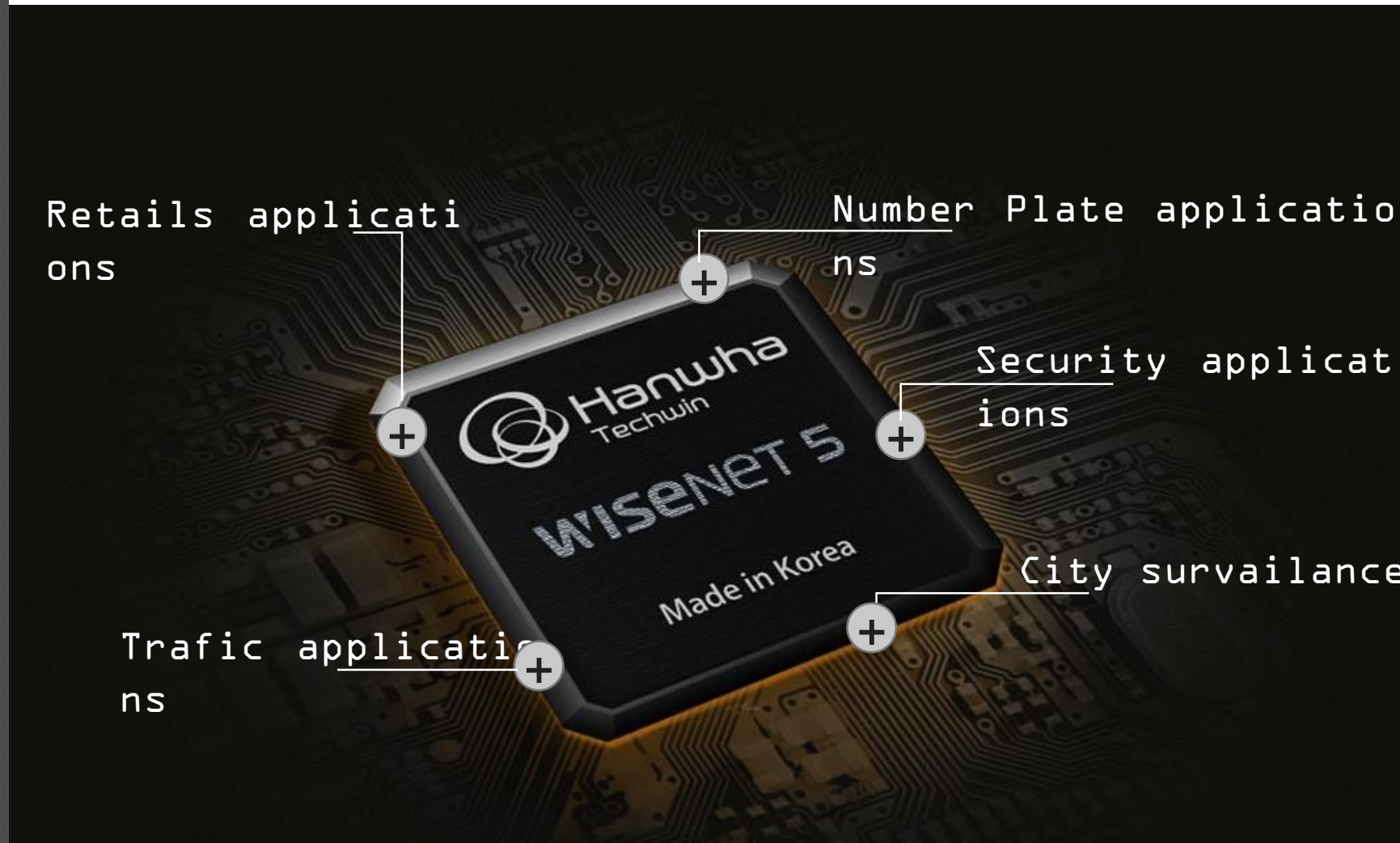
sprinxtechnologies
spirit of research and innovation

TechnoAware
TECHNOLOGIES FOR AMBIENT INTELLIGENCE

Hanwha Techwin

X PLUS Cameras

Open Platform



WISENET

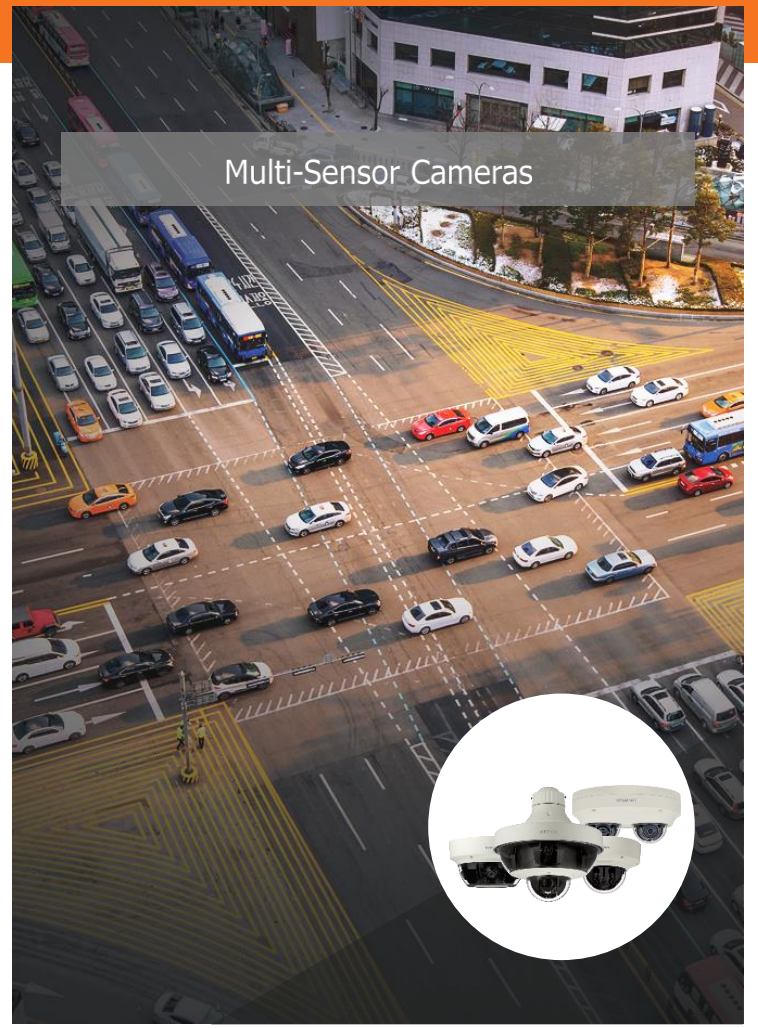
Hanwha Techwin

P series

Premium Cameras

with the Most Advanced Technology

Wisenet P series, the ultimate premium cameras designed with the most advanced technology, delivers users an outstanding video surveillance solution.
From bullet cameras to multi-sensor cameras, the P series have a wide range of products optimized for applications which require extreme details and wide area coverage.



WISENET

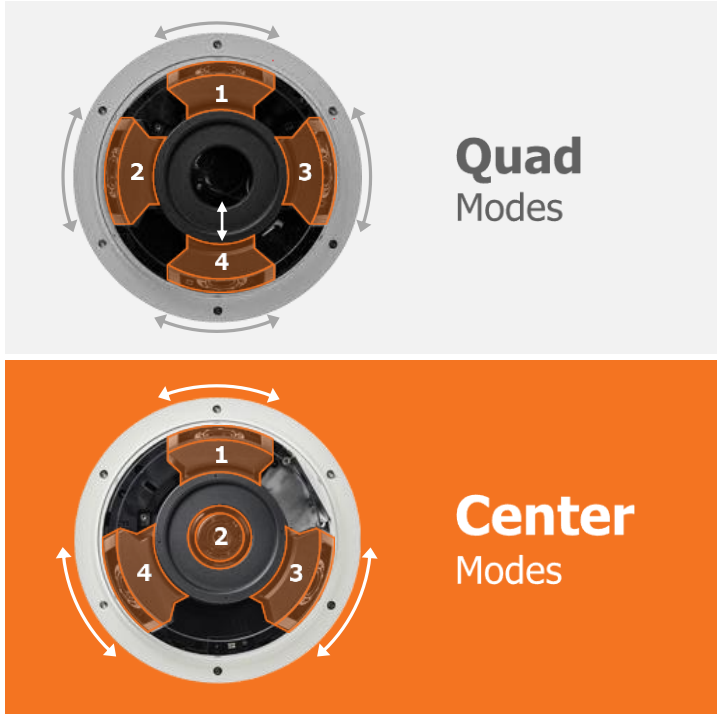
P series

- 8MP (4ea x 2MP) to 20MP (4ea x 5MP) resolution
- Exchangeable lens modules for PNM-9000VQ (4ea x 2MP / 5MP)
- Max. 60fp at 2M, Max. 30fps at 5M
- WDR 150dB at 2MP, 120dB at 5MP
- H.265 / H.264 / MJPEG
- WiseStream II, Video Analytics

PNM-9000VQ
with exchangeable lenses

Hanwha Techwin

Multi-Directional Cameras



A Complete 360° View with 4 Sensors

The four sensors move independently on top of the tracks enabling users to monitor a complete 360° view without any blind spots.

Multiple View Modes

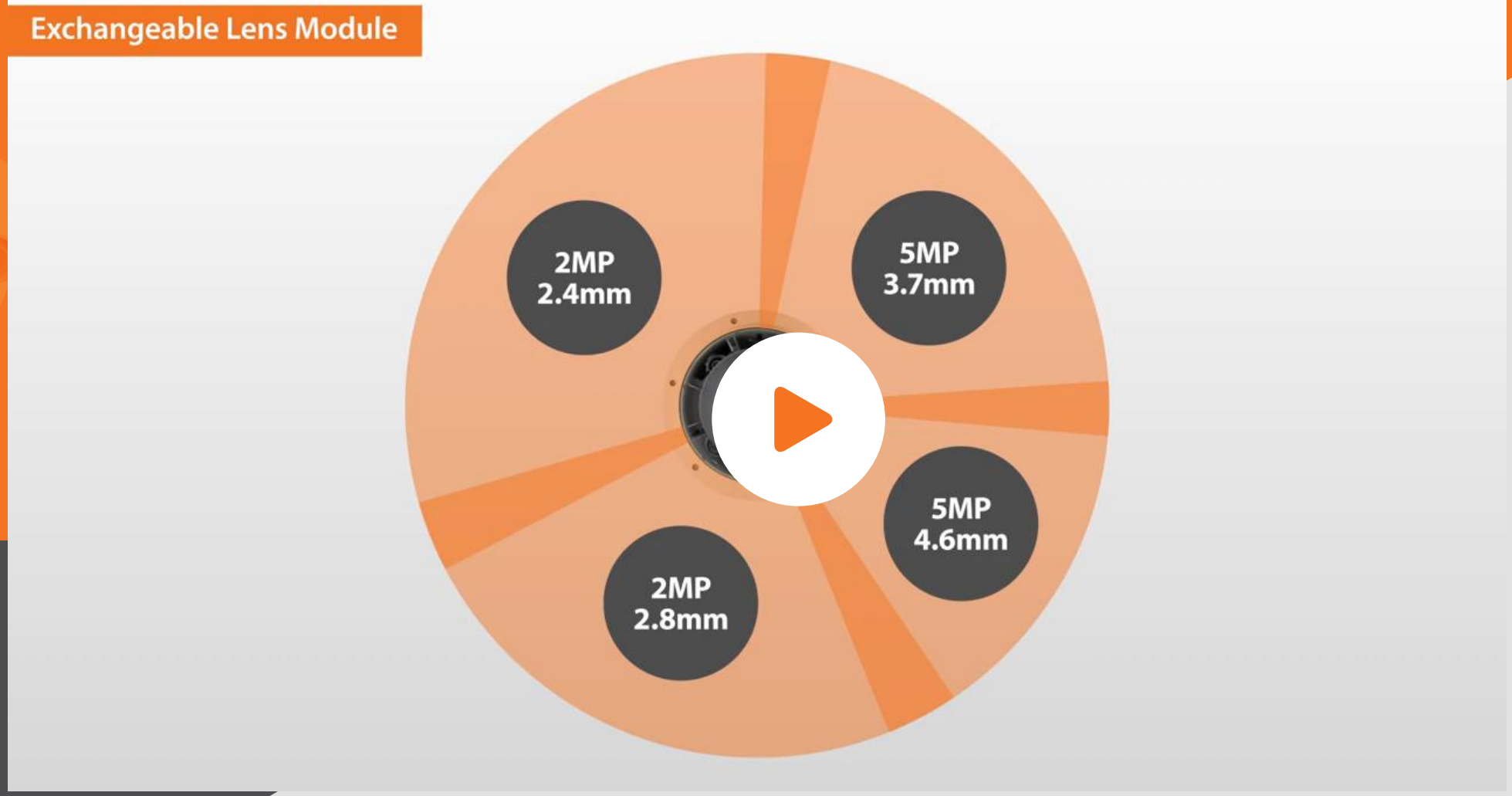
One of the sensors can easily be removed and attached in the center of the camera, allowing for flexible set-up.

WISENET

Hanwha Techwin

P series

Multi-Directional +PTZ Cameras

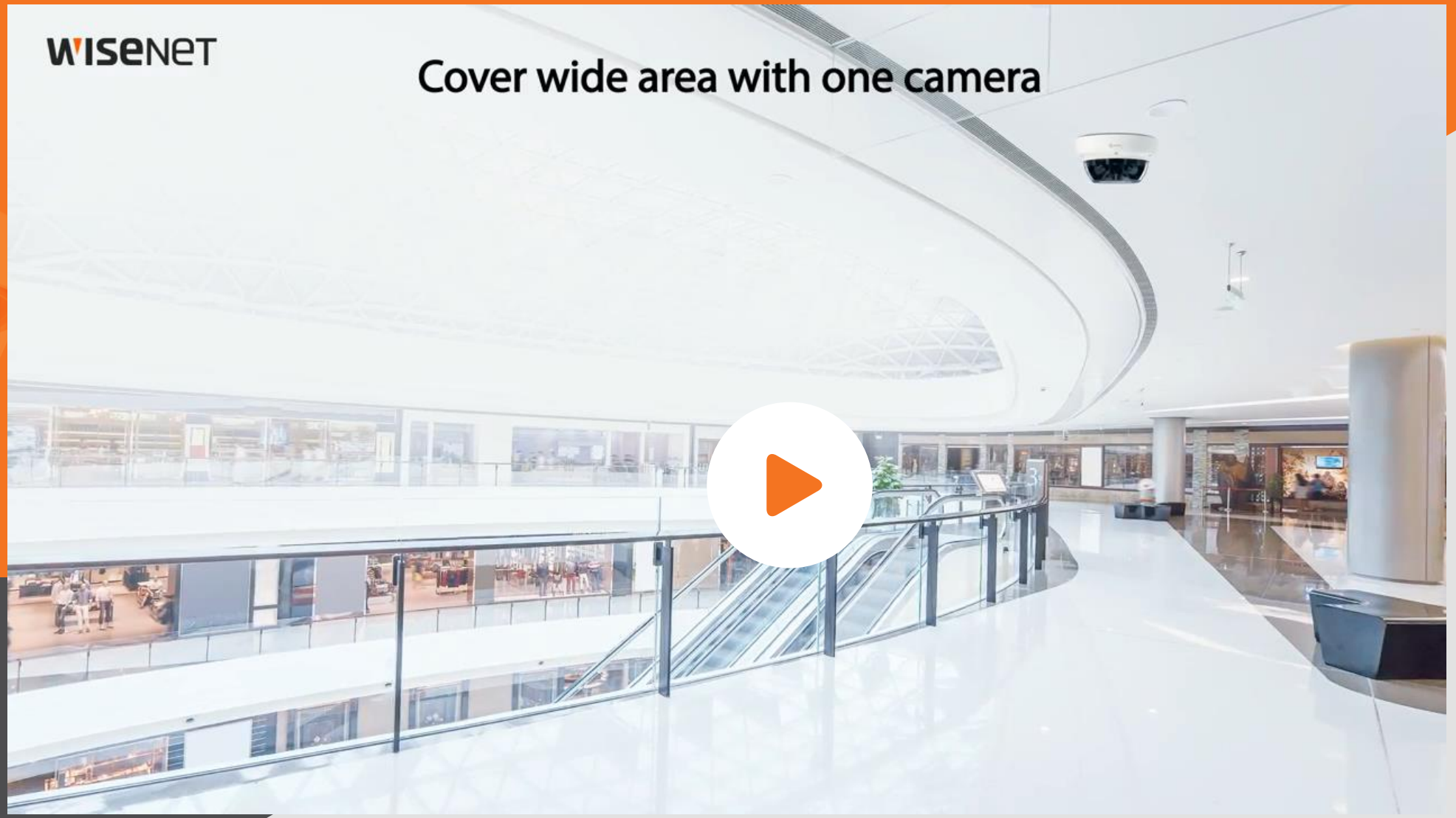


WISENET

Hanwha Techwin

P series

Multi-Directional +PTZ Cameras



WISENET

P series

- 10MP to 22MP resolution
  Exchangeable 4ea x 2MP / 5MP lens modules for multi-directional camera plus 2MP 32x PTZ camera
- Max. 60fps at 2MP, Max. 30fps at 5MP
- WDR 150dB at 2MP, 120dB at 5MP
- H.265 / H.264 / MJPEG
- WiseStream II, Video Analytics

PNM-9320VQP
with exchangeable lenses

Hanwha Techwin

Multi-Directional +PTZ Cameras

4 + 1 Cameras in One

Monitor a 360° wide area with the multi-directional camera while the PTZ camera zooms into the desired area.

Advance Handover to PTZ

When an event is detected, the PTZ can zoom into the event or the preset location for closer inspection.

WISENET

Hanwha Techwin

P series

Multi-Directional +PTZ Cameras

WISENET

P series

- Max. 20MP resolution
- Max. 30fps at all resolutions
- H.265 / H.264 / MJPEG
- WiseStream II
- Panoramic stitching, original, crop view channel support
- 180°/220° panoramic stitching image

PNM-9030V

Hanwha Techwin

180° / 220° **Panoramic** Cameras

Single Panorama + Original + Crop images

PNM-9030V can simultaneously stream a total of 7CH : A single 20MP panoramic image merged from the 4 images, 4 original images from each sensor, and 2 crop images.

5MP Original images x **4ea**

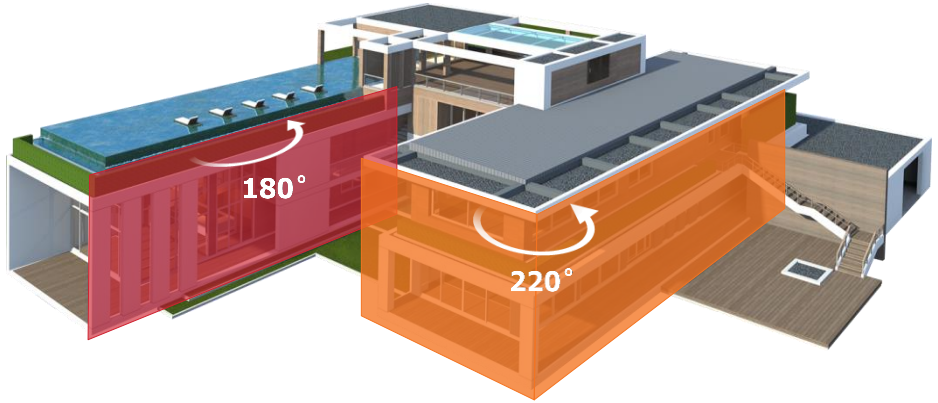
2MP crop images x **2ea**

Single panoramic **20MP** image

180° and 220° View Mode for Panorama Images

180° mode maximizes the effectiveness with its vast vertical viewing angle.

220 ° mode helps users to monitor areas that need wider viewing angle such as the corners of the building.



WISENET

Hanwha Techwin

P series

180° / 220 °
Panoramic Cameras

WISENET

T series

TNO-4050T/4040T/4040TR/4030T/
4030TR

TNO-4051T/4041T/4041TR

TNU-4051T/4041T

TNU-6320E

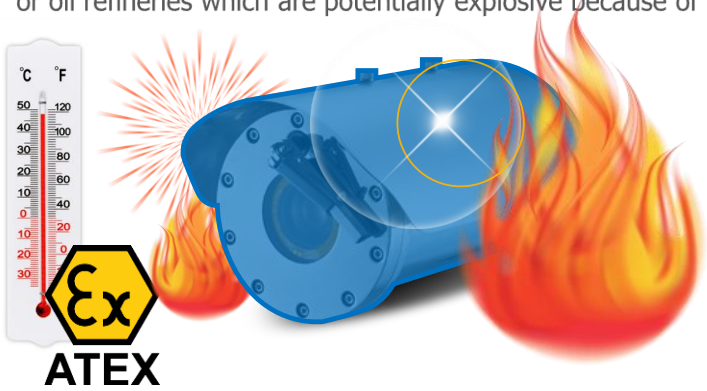
TNO-6320E

Hanwha Techwin

Explosion-proof Cameras

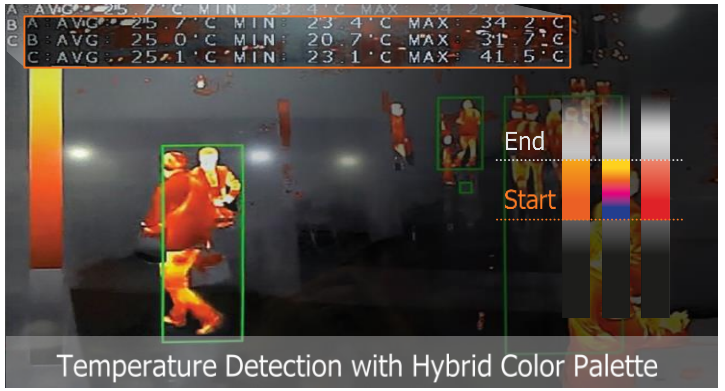
Explosion proof Cameras for Hazardous Environments - Stainless Steel 316L

Wisenet T series explosion proof cameras can be used in heavy industrial facilities such as gas pipelines, petrochemical plants or oil refineries which are potentially explosive because of flammable gases and dusts emitted.

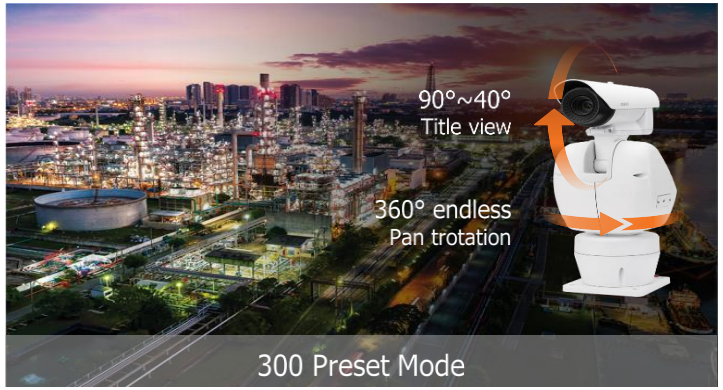


Thermal cameras with Radiometry - Temperature Detection

The radiometry cameras detect the temperature range of -20°C to +130°C and send alarms when the temperature is above or below a defined value. Using the hybrid color palette, a preset temperature range can be displayed in vivid colors, helping users observe monitoring areas with greater ease.



Temperature Detection with Hybrid Color Palette



300 Preset Mode

WISENET

Recording Solution

- Lightweight, Powerful
- Open to 3rd party devices
- Open to OS
- Open for developers (API)
- Easy to operate
- Cloud enabled
- Scalable to any size

Hanwha Techwin

Wisenet Wave

Cutting edge video management solutions

Hanwha Techwin offers an entry level VMS called SSM and for sophisticated Enterprise level VMS projects, the company integrates with leading technology partners. Wisenet WAVE has been launched to answer the needs of projects in the middle ground with an emphasis on simplified user experience.


New Layout 4
PNM1*
IVA+PTZ*
Resources
Search
PC1
admin
Server DESKTOP-LPAHKQ2
PNM-9081VQ
PNM-9081VQ
PNM-9081VQ-channel 2
PNM-9081VQ-channel 3
PNM-9081VQ-channel 4
QRN-810
PNF-9010RV
PNO-9080R
XND-8080R
XNO-8080R
XNP-6040H
XNP-6320H
Layouts
Map
ALL
AreaZoom
DemoStand1
DemoStand2
Fish360
IVA+PTZ*
New Layout 2
PNM
PNM1*
Thermal
Thermal+4k
Showreels
Video Wall
Web Pages
Users
Local Files
histo1.avi
pmn7.avi
pnm1.avi
XNO-8080R
LIVE
Email server is not set
Email address is not set for user alarm
Email address is not set for user jaro
Email address is not set
Loitering at XNO-8080R
Acknowledge
Loitering at XNO-8080R
Acknowledge
Loitering at XNO-8080R
Acknowledge
Loitering at XNO-8080R
Acknowledge
29 March 2018 2 pm
pm
30s
2:06 pm
2:07 pm
2:08 pm
2:09 pm
2:10 pm
2:11 pm
2:12 pm
2:13 pm
2:14 pm
2:15 pm
2:16 pm
2:17 pm
2:18 pm
2:19 pm
XNO-8080R
LIVE
SYNC
14:18:21

New Layout 2*

Resources Search

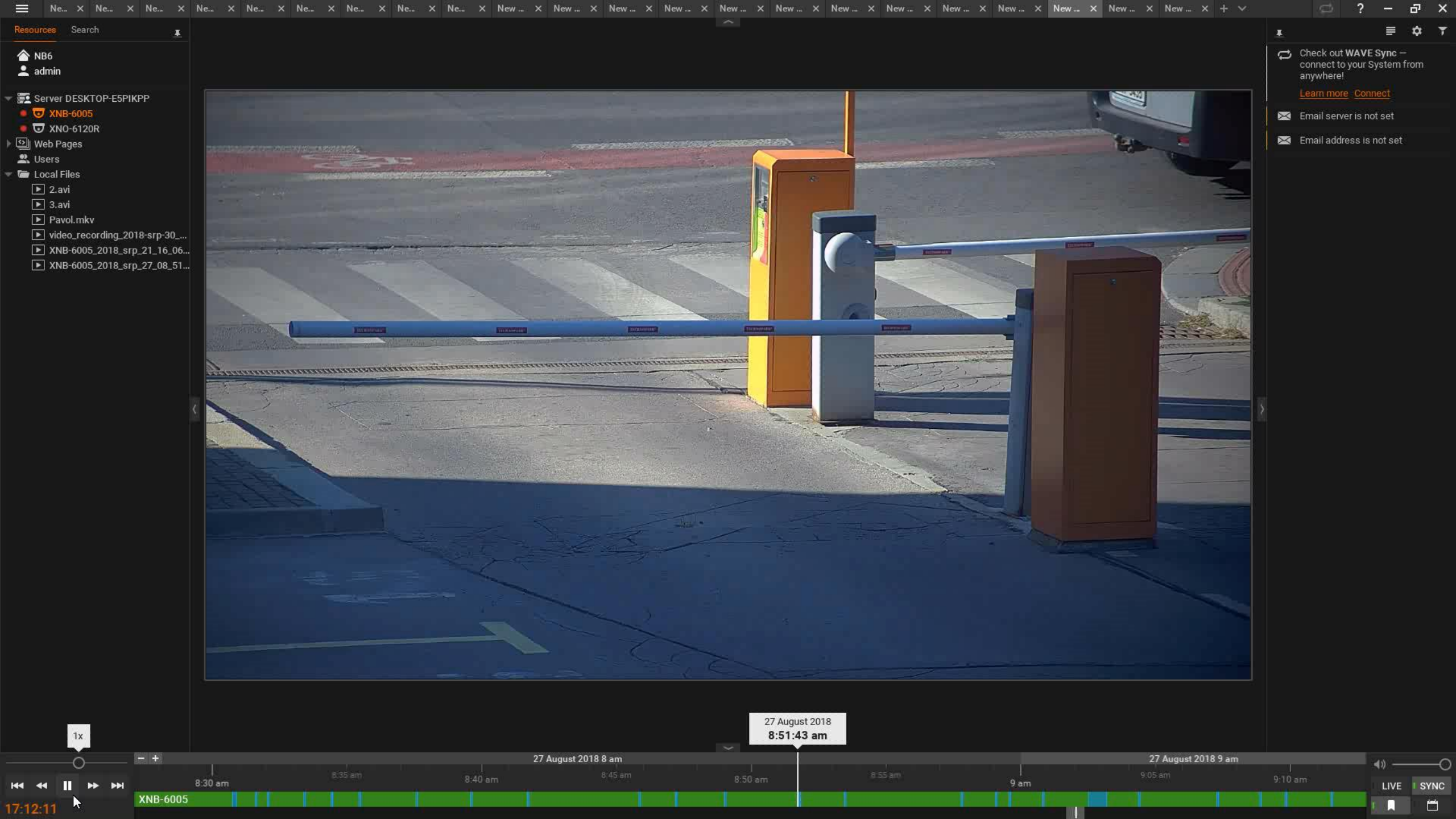
PC0
admin1

PC0
- PNM-9081VQ
- LNV-6070R
- PNF-9010RV
- QNO-7080R
- XND-8080R
- XNF-8010R
- XNO-6120R
- XNO-8080R
- XNP-6040H

Layouts
Showreels
Web Pages
Users
Local Files
- histo1.avi
- marixreloaded1.avi
- marixreloaded2.avi
- marixreloaded3.avi
- marixreloaded4.avi
- marixreloaded5.avi
- marixreloaded6final.avi
- pmn7.avi
- pnm1.avi
- pnm2.avi
- pnm3.avi
- pnm4.avi
- pnm6.avi
- QND-7080R_2018_Mar_21_15...
- QualityL_Q.avi
- SS1.avi
- SS2.avi
- SS3.avi
- tr+iva.avi
- tr+loit.avi
- tracking1.avi
- tracking2.avi
- tr2.avi
- tr3loiter.avi
- video_recording_2018-Mar-21...
- video_recording_2018-Mar-21...
- video_recording_2018-Mar-29...

PNF-9010RV 192.168.2.170

PNF-9010RV

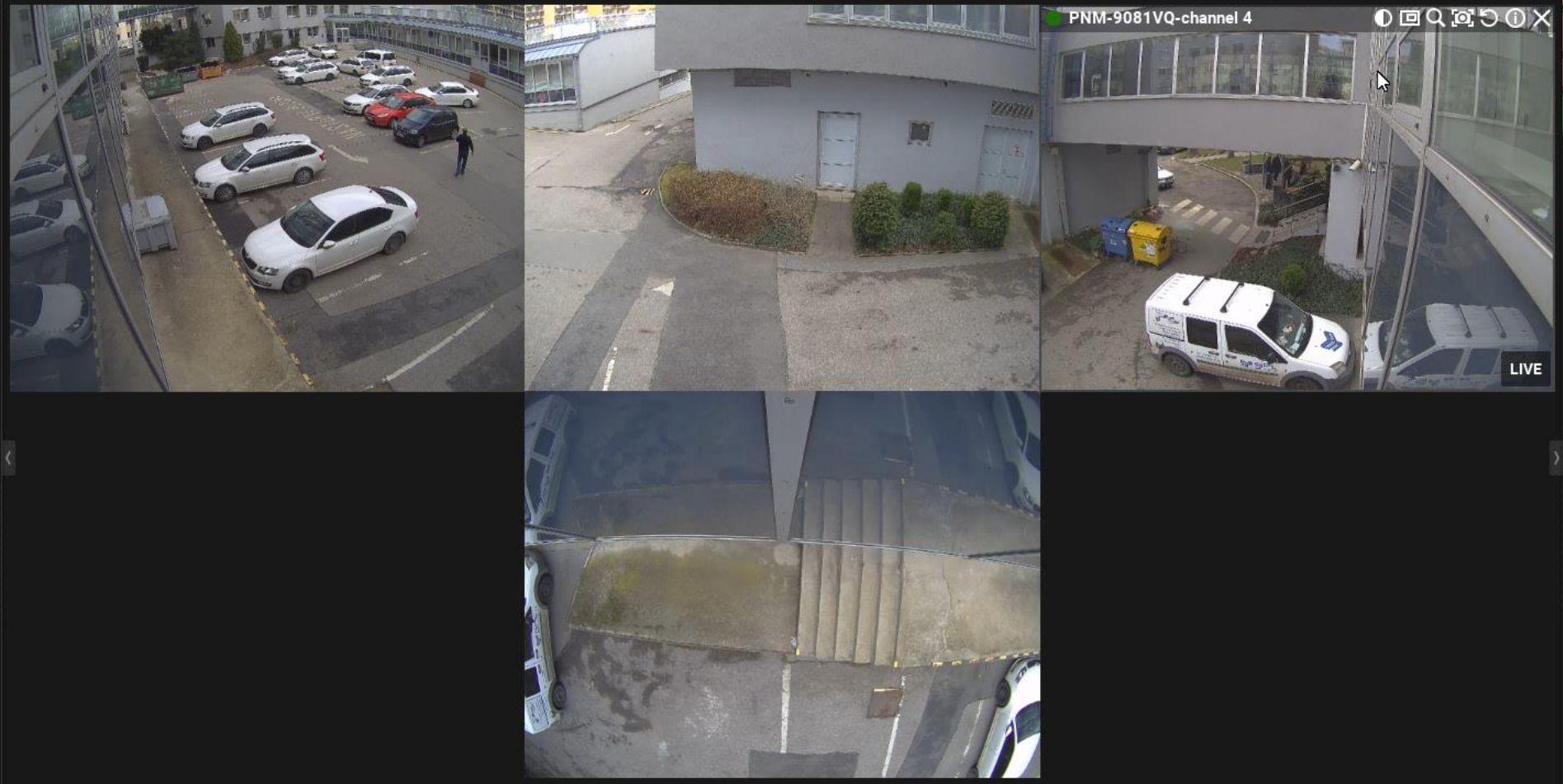

Resources
Search
NB6
admin
Server DESKTOP-E5PIKPP
XNB-6005
XNO-6120R
Web Pages
Users
Local Files
2.avi
3.avi
Pavol.mkv
video_recording_2018-srp-30_...
XNB-6005_2018_srp_21_16_06...
XNB-6005_2018_srp_27_08_51...
Check out WAVE Sync — connect to your System from anywhere!
Learn more
Connect
Email server is not set
Email address is not set
27 August 2018
8:51:43 am
1x
27 August 2018 8 am
27 August 2018 9 am
8:30 am
8:35 am
8:40 am
8:45 am
8:50 am
8:55 am
9 am
9:05 am
9:10 am
XNB-6005
LIVE
SYNC
17:12:11

PNM1* | IVA+PTZ* | Alarms | New Layout 4*

Resources | Search

PC1
admin

- Server DESKTOP-LPAHKQ2
  - PNM-9081VQ
    - PNM-9081VQ
    - PNM-9081VQ-channel 2
    - PNM-9081VQ-channel 3
    - PNM-9081VQ-channel 4
  - QRN-810
  - PNF-9010RV
  - PNO-9080R
  - XND-8080R
  - XNO-8080R
  - XNP-6040H
  - XNP-6320H
- Layouts
  - Map
  - ALL
  - AreaZoom
  - DemoStand1
  - DemoStand2
  - Fish360
  - IVA+PTZ*
  - New Layout 2
  - PNM
  - PNM1*
  - Thermal
  - Thermal+4k
- Showreels
- Video Wall
- Web Pages
- Users
- Local Files
  - pnm1.avi
  - tr+iva.avi
  - tr+loit.avi
  - tracking1.avi
  - tracking2.avi
  - tr2.avi
  - tr3loiter.avi



- Email server is not set
- Email address is not set for user alarm
- Email address is not set for user jaro
- Email address is not set
- Virtual line crossing at PNM-9081VQ-channel 4

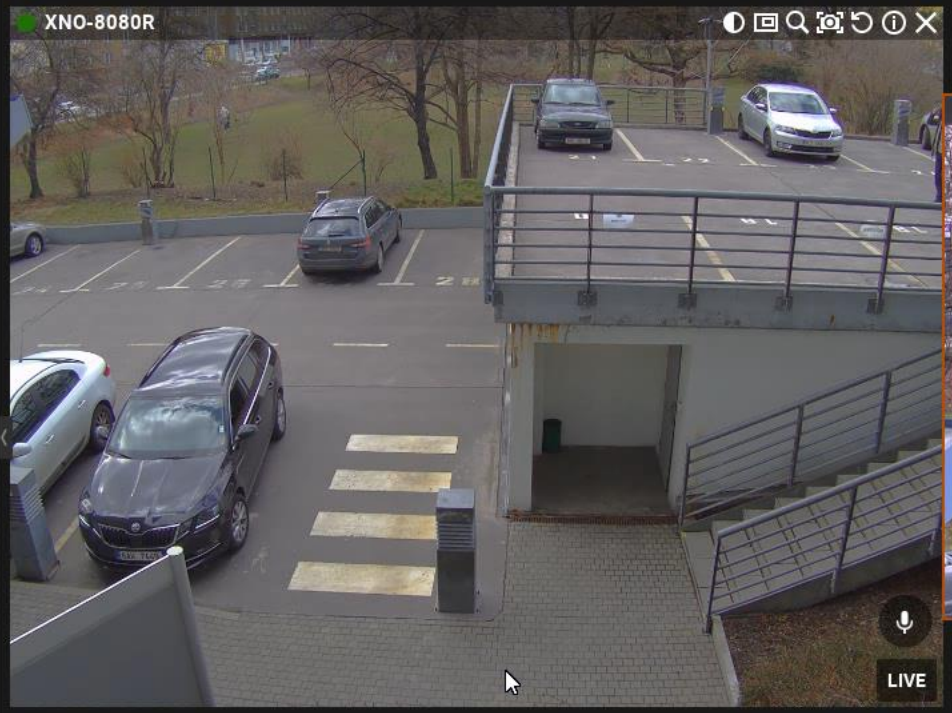
29 March 2018 12 pm
29 March 2018 1 pm
12:30 pm 12:35 pm 12:40 pm 12:45 pm 12:50 pm 12:55 pm 1 pm 1:05 pm 1:10 pm 1:15 pm 1:20 pm 1:25 pm 1:30 pm 1:35 pm 1:40 pm 1:45 pm 1:50 pm
PNM-9081VQ-channel 4
13:50:23
LIVE SYNC

PNM1 | IVA+PTZ*

Resources | Search

PC1
admin

- Server DESKTOP-LPAHKQ2
  - PNM-9081VQ
  - QRN-810
  - PNF-9010RV
  - PNO-9080R
  - XND-8080R
  - XNO-8080R
  - XNP-6040H
  - XNP-6320H
- Layouts
- Showreels
- Video Wall
- Web Pages
- Users
- Local Files
  - tracking1.avi
  - tracking2.avi
  - tr2.avi
  - tr3loiter.avi



Email server is not set

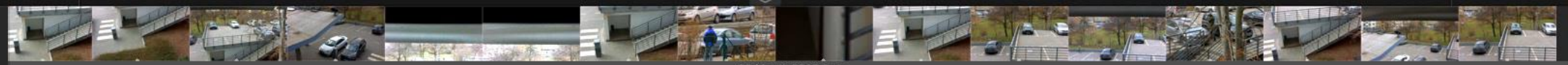
Email address is not set for user alarm

Email address is not set for user jaro

Email address is not set

Loitering at XNO-8080R
Acknowledge

Loitering at XNO-8080R
Acknowledge



29 March 2018 1 pm

1:21 pm 1:22 pm 1:23 pm 1:24 pm 1:25 pm 1:26 pm 1:27 pm 1:28 pm 1:29 pm 1:30 pm 1:31 pm 1:32 pm 1:33 pm 1:34 pm 1:35 pm 1:36 pm 1:37 pm 1:38 pm 1:39 pm 1:40 pm 1:41 pm 1:42

XNP-6320H

13:40:59

LIVE SYNC

sprinxtechnologies
spirit of research and innovation

Sprinx AID Solutions

ver. 1.4.0 [en]

Who We Are?

sprinxtechnologies
spirit of research and innovation

> ***Coming together is a beginning;***
> ***keeping together is progress;***
> ***working together is success.***
>
> Henry Ford

Sprinx Technologies, *Spirit of Research and Innovation*, is an Italian software development & engineering company, focused on designing and providing intelligent video surveillance software applications for traffic and transportation industry. Sprinx is one of the few market players able to provide total video AID and Traffic Data solutions for roads, highways, tunnels and smart cities.

Company Highlights

A snapshot of Sprinx milestones

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spirit of research and innovation

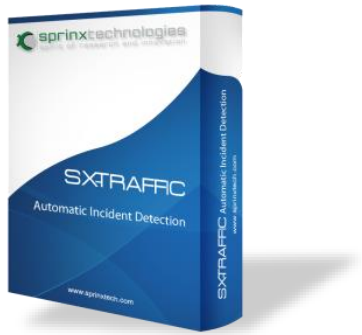
2009

SPRINX TECHNOLOGIES is founded in Milan on October 2, 2009

2010

On January 2010 SPRINX starts developing intelligent video solutions for Automatic Incident Detection.

2011



SX-TRAFFIC 1.0 is released

SPRINX signs a contract with TUNNELGEST to supply video surveillance and AID solutions for 45 tunnels in Northern Italy
[1.500 AID channels]

2012

SPRINX supplies video surveillance equipment and total video management platform (TVM) for traffic monitoring of CITYRING Luzern.
[600 video channels]

2013

Autostrada Pedemontana Lombarda

SPRINX signs a contract with ELEF to supply video surveillance and AID solutions for the new italian A36 Motorway Pedemontana Lombarda.
[1.316 cameras / 657 AID channels / 125 LPR smart cameras]

Company Highlights

A snapshot of Sprinx milestones

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2014

SX-VISION^{TRAFFIC} AID smart camera is launched

SPRINX signs a contract with THALES to supply video surveillance and AID solutions for A3 Motorway.
[40 AID channels / 130 AID smart cameras]

2015

Sprinx Traffic Flow application for Samsung Techwin Wisenet III cameras is presented at SICUREZZA

SPRINX supplies total video management platform (TVM) for traffic monitoring of GOTTHARD Roadtunnel + 5 tunnels.
[400 video channels]

WiseNet III

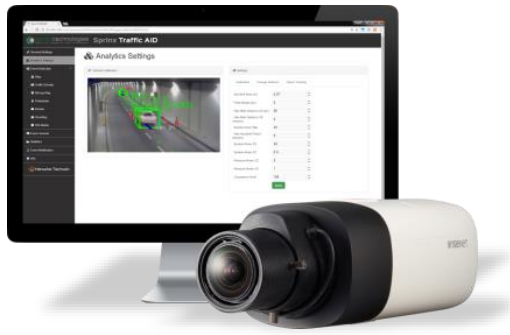
2016

SX-TRAFFIC 2.0 is released

SPRINX AID solution is selected to realize the first installation in Switzerland for highway traffic control and event detection based on thermal cameras

2017

Sprinx Traffic AID Application for Hanwha Techwin Wisenet X cameras is presented at IFSEC 2017 London



WISENET X series

2018

Intertraffic INNOVATION AWARD 2018 NOMINEE

TRAFFIX 3.0 is released

Sprinx Traffic Application nominee at Intertraffic Innovation Awards 2018, the world's leading event in traffic industry

Sprinx in Numbers

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over
600.000 meters of roadtunnel
equipped with Sprinx AID software

over
30 control rooms
equipped with Sprinx Traffic management platform

over
12.000 operating cameras for traffic control
managed by Sprinx video surveillance software platforms

over
1.700.000 meters of road
equipped with Sprinx intelligent video surveillance solution

over
6.500 operating AID video channels
processed by Sprinx AID software

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TRAFFIX

Server-based solution for Automatic Incident Detection

TRAFFIX

Server-based solution for Automatic Incident Detection

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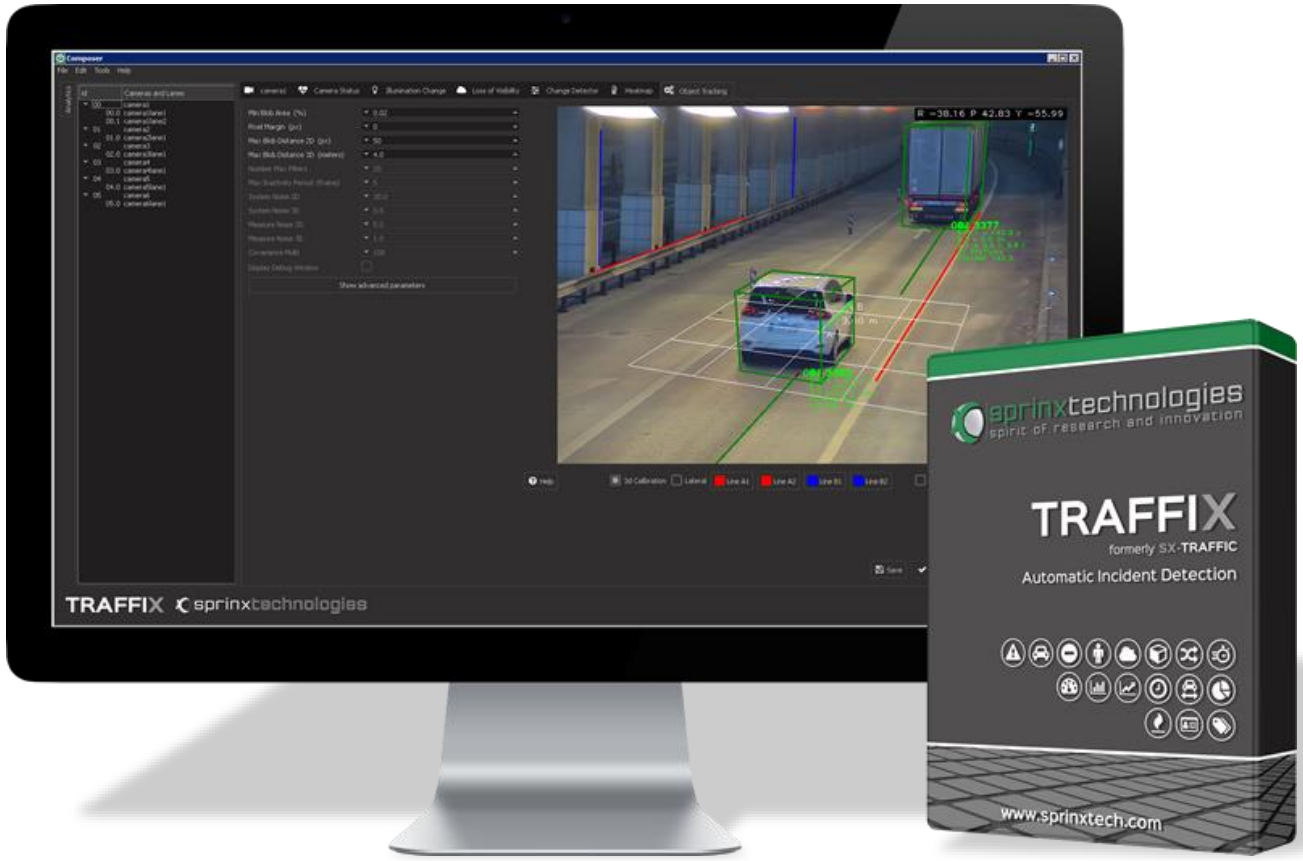

TRAFFIX is a complete and professional server-based solution for Automatic Incident Detection and Traffic Data Collection. It allows reliable detection of incidents and anomalies in traffic flow on critical infrastructures such as highways, tunnels and intersections.

TRAFFIX is more than a standard AID software.

In addition to analyzing images from standard IP cameras to detect traffic incidents, it is able to collect traffic events and data processed by Sprinx **TRAFFIC APPS** and license plate information from ANPR cameras.

Events and Data coming from different TRAFFIX servers can be easily visualized in a single cloud ready dashboard called **DRAGON**

TRAFFIX

Server-based solution for Automatic Incident Detection

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TRAFFIX

Server-based solution for Automatic Incident Detection

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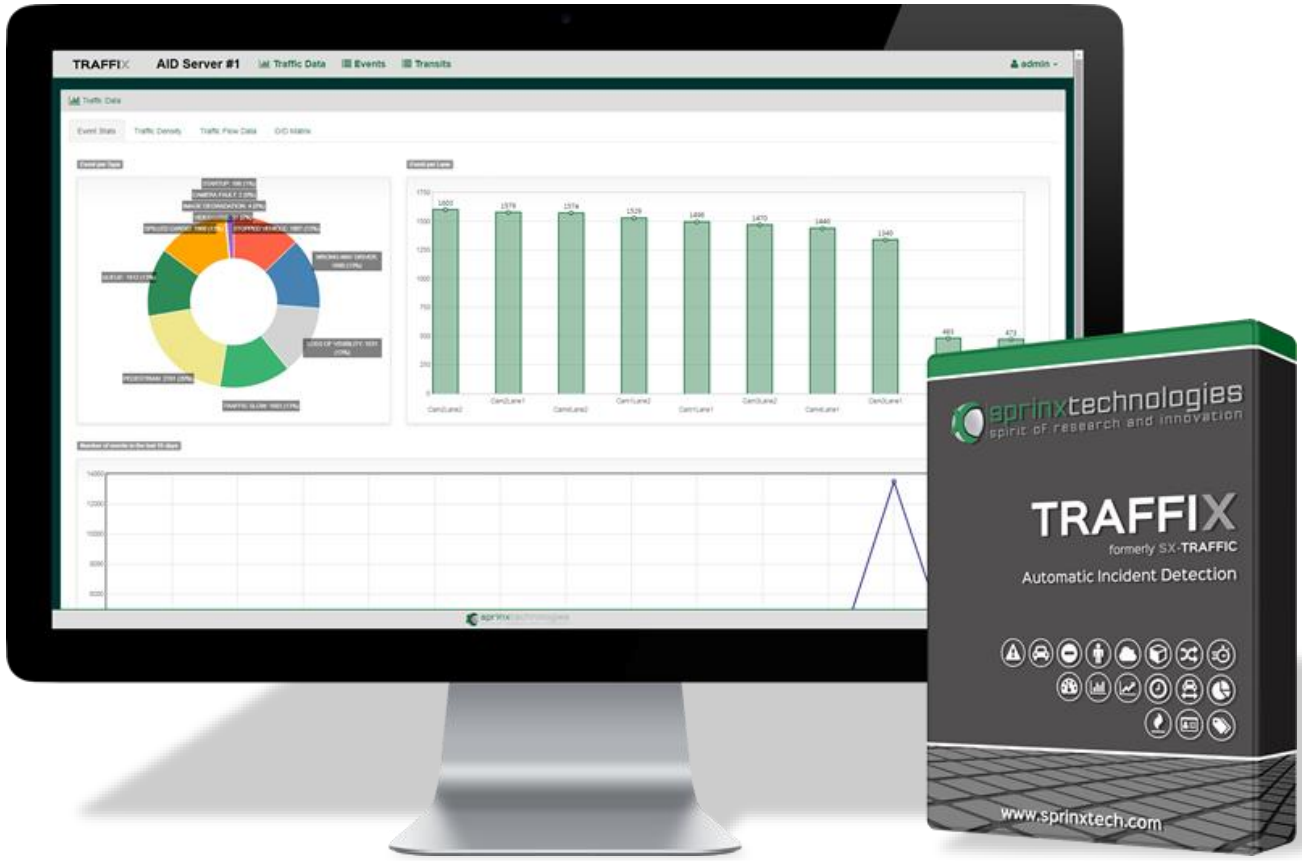

- AID analysis up to 16 ch (800x450 resolution @12fps)
- ONVIF and RTSP cameras supported
- Up to 4 lanes for each camera
- System and Detection settings via Client application
- Alarm and Event reporting via Web interface
- Integration with 3rd party systems via:
  - TCP messages
  - Modbus protocol
  - OPC-DA protocol
  - Dry contacts on Moxa I/O device
- Integration with VMS platforms:
  - Mirasys
  - Milestone
  - Wisenet Wave
  - Seetec
  - IndigoVision NVR
  - Others upon request
- Ddata collection from Sprinx Traffic AID cameras and LPR cameras
- Video clip of traffic events (option)
- Failover configuration (option)

TRAFFIX

Server-based solution for Automatic Incident Detection

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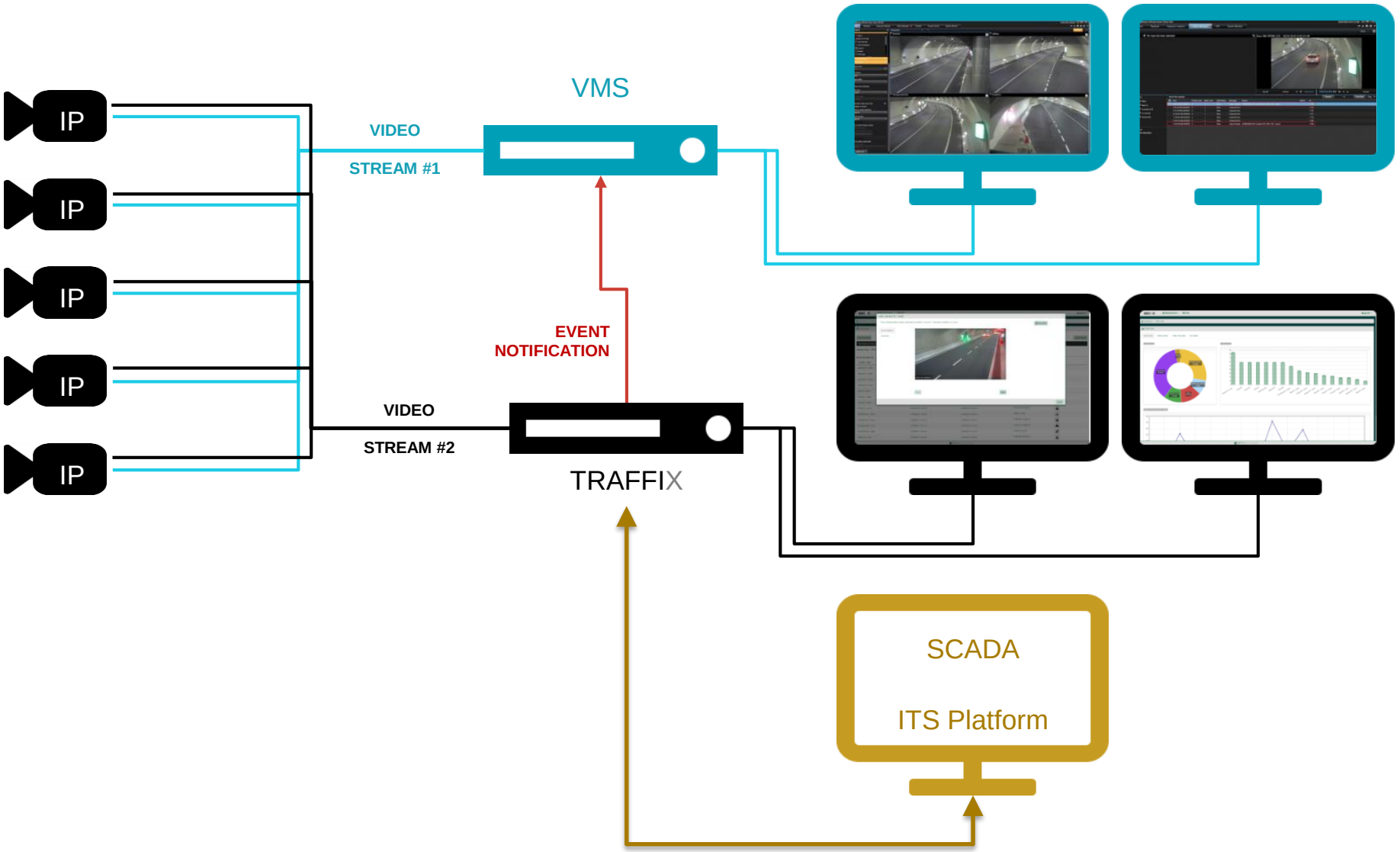

TRAFFIX

Server-based solution for Automatic Incident Detection

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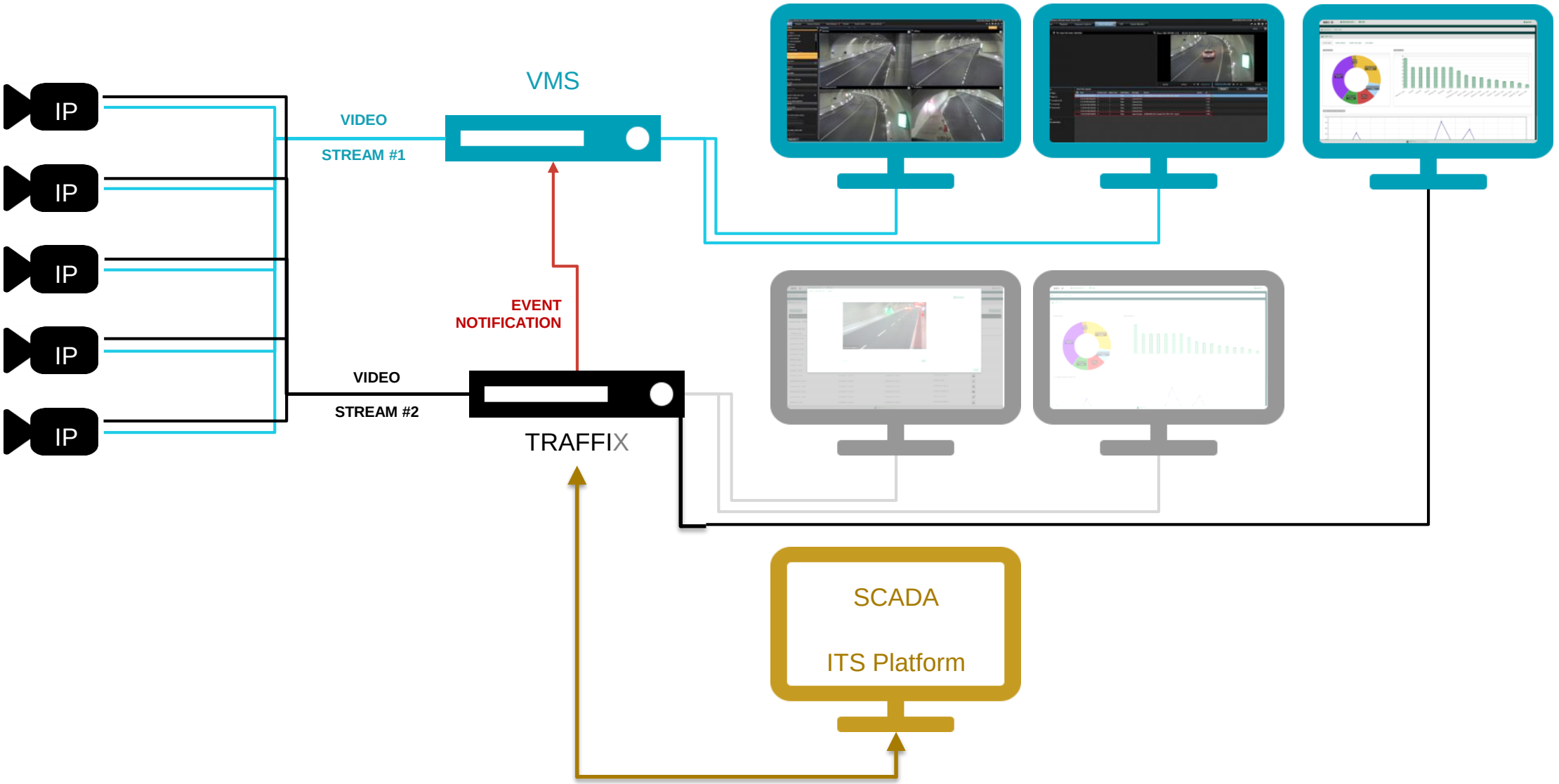

TRAFFIX

Server-based solution for Automatic Incident Detection

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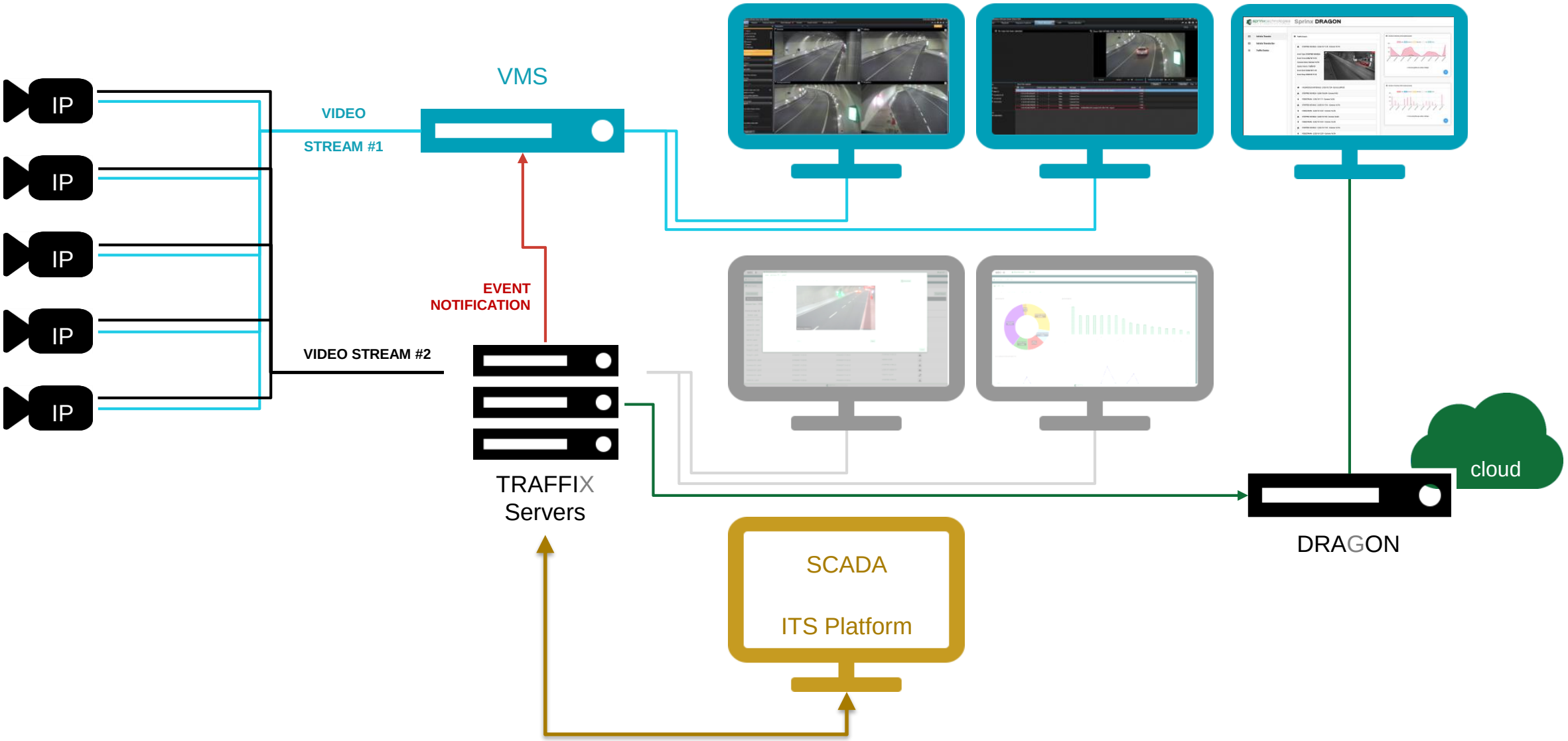

TRAFFIX

Server-based solution for Automatic Incident Detection

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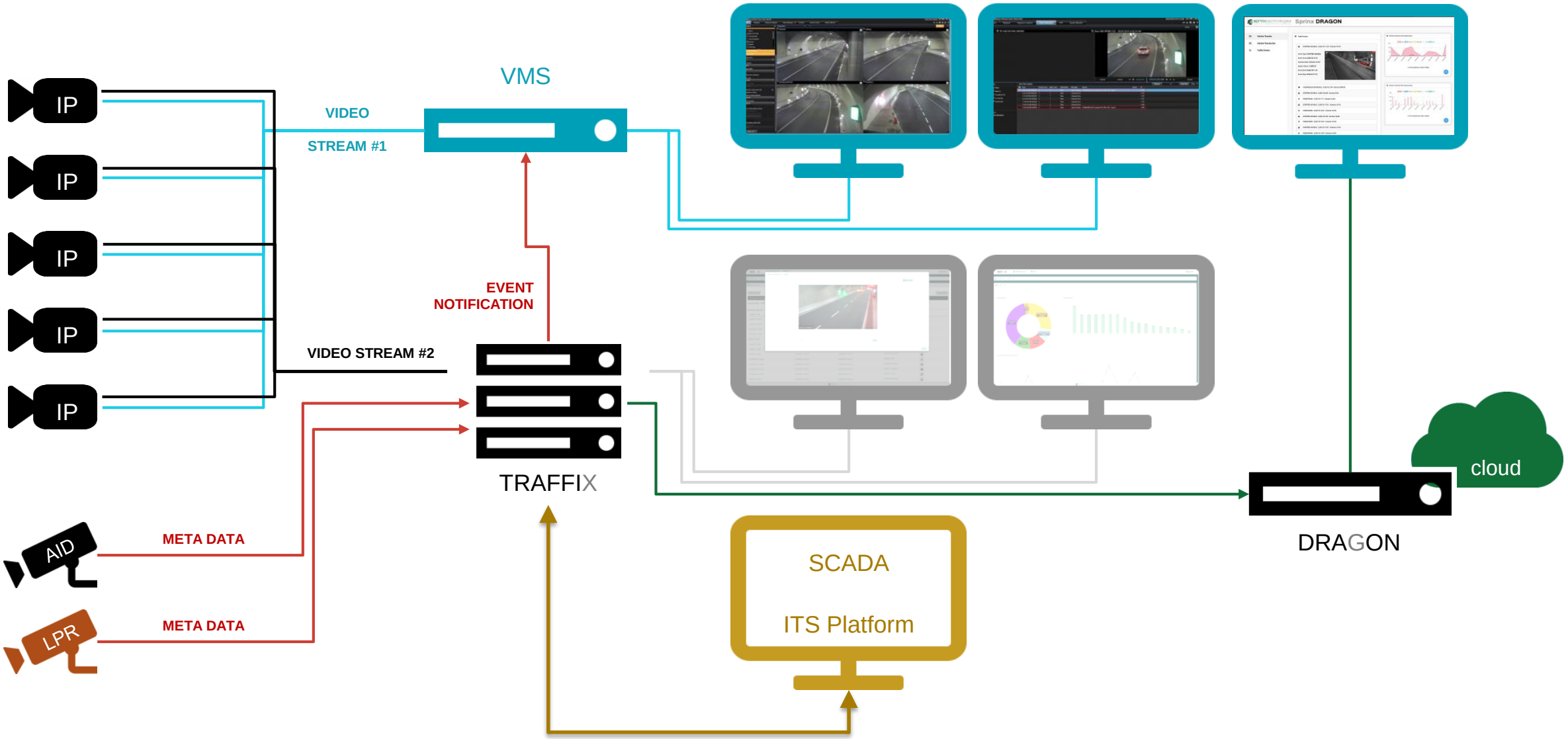

TRAFFIX

Server-based solution for Automatic Incident Detection

sprinxtechnologies
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CITY	BASIC	PRO	ADVANCED	PREMIUM
	STOPPED VEHICLE	STOPPED VEHICLE	STOPPED VEHICLE	STOPPED VEHICLE
	SLOWDOWN & QUEUE	SLOWDOWN & QUEUE	SLOWDOWN & QUEUE	SLOWDOWN & QUEUE
	PEDESTRIAN	PEDESTRIAN	PEDESTRIAN	PEDESTRIAN
	SMOKE / LOSS of VISIBILITY		SMOKE / LOSS of VISIBILITY	SMOKE / LOSS of VISIBILITY
		WRONGWAY DRIVER	WRONGWAY DRIVER	WRONGWAY DRIVER
			SPILLED CARGO	SPILLED CARGO
			UNDERSPEED / OVERSPEED	UNDERSPEED / OVERSPEED
			UNSAFE LANE CHANGE	UNSAFE LANE CHANGE
TRAFFIC DENSITY (LoS)				
COUNTING & CLASSIF.		TRAFFIC DENSITY (LoS)		TRAFFIC DENSITY (LoS)
AVERAGE SPEED		COUNTING & CLASSIF.		COUNTING & CLASSIF.
		[illegible]		AVERAGE SPEED
VEHICLE DISTANCE (time)		VEHICLE DISTANCE (space)		VEHICLE DISTANCE (space)
O/D MATRIX		VEHICLE DISTANCE (time)		VEHICLE DISTANCE (time)


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TRAFFIC Applications
Edge-based applications on Hanwha Techwin cameras
Hanwha Techwin

TRAFFIC Applications

Edge-based applications on Hanwha Techwin cameras

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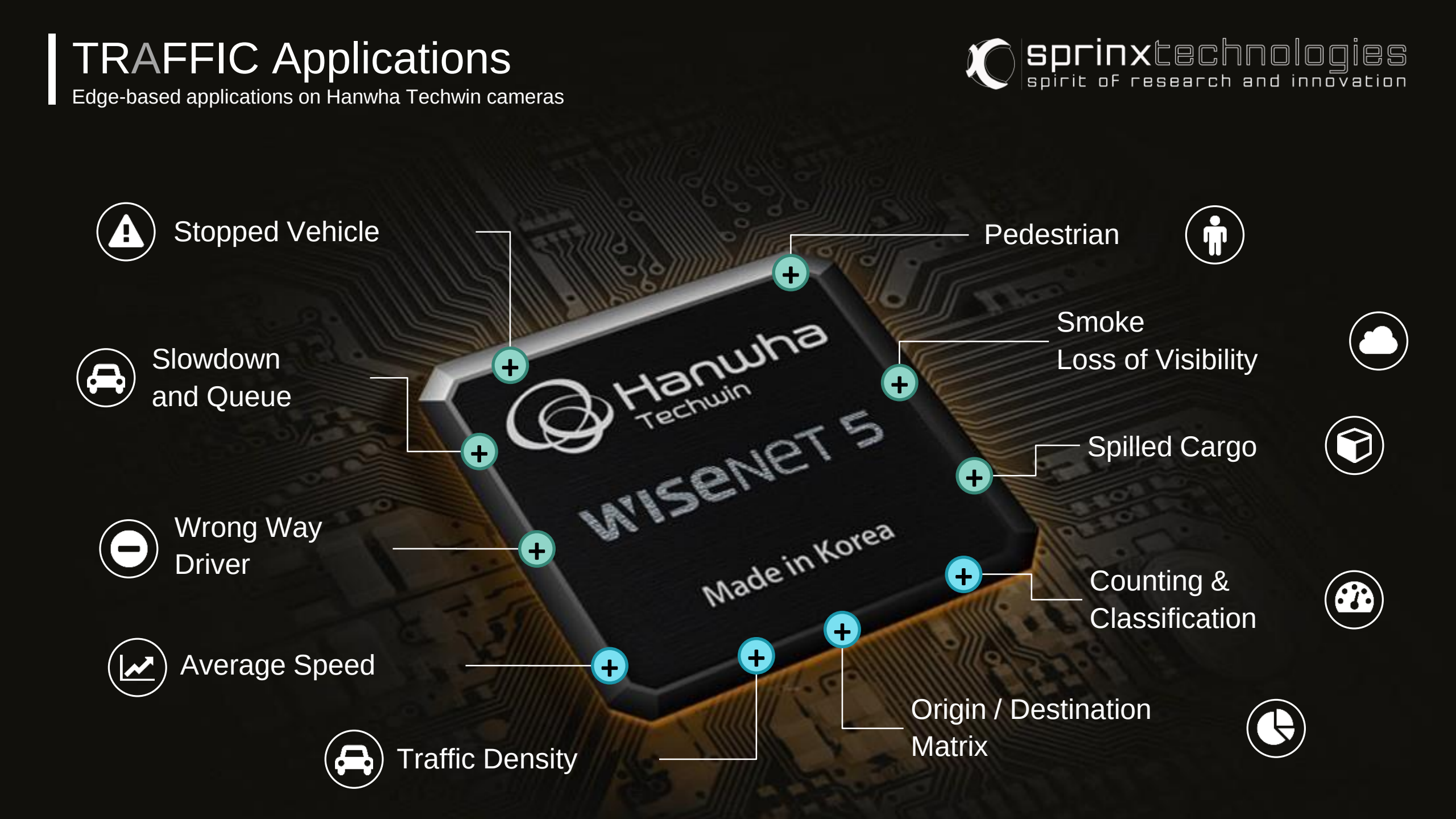

TRAFFIC Applications

Edge-based applications on Hanwha Techwin cameras

sprinxtechnologies
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Traffic Flow

Edge-based application running on Hanwha Techwin cameras for the detection of:

- Stopped Vehicle
- Slowdown
- Congestion

WiseNet III

Traffic Data

Edge-based application running on Hanwha Techwin cameras for Traffic Data Collection:

- Vehicle Counting
- Classification
- Average Speed estimation

WiseNet III

TRAFFIC Flow

Edge-based application running on Hanwha Techwin cameras for the detection of:

- Stopped Vehicle
- Slowdown
- Congestion
- Traffic Density

WISENET X series

TRAFFIC Data

Edge-based application running on Hanwha Techwin cameras for Traffic Data Collection:

- Vehicle Counting
- Classification
- Average Speed estimation
- Traffic Density
- Origin/Destination Matrix

WISENET X series

TRAFFIC PSD

Edge-based application running on Hanwha Techwin cameras for the detection of:

- Stopped Vehicle
- Pedestrian

WISENET X series

TRAFFIC AID

Edge-based application on Hanwha Techwin cameras with all AID features:

- Stopped Vehicle
- Slowdown/Queue
- Wrong Way
- Pedestrian
- Smoke
- Spilled Cargo
- Traffic Data

WISENET X series

TRAFFIC Applications

Edge-based applications on Hanwha Techwin cameras

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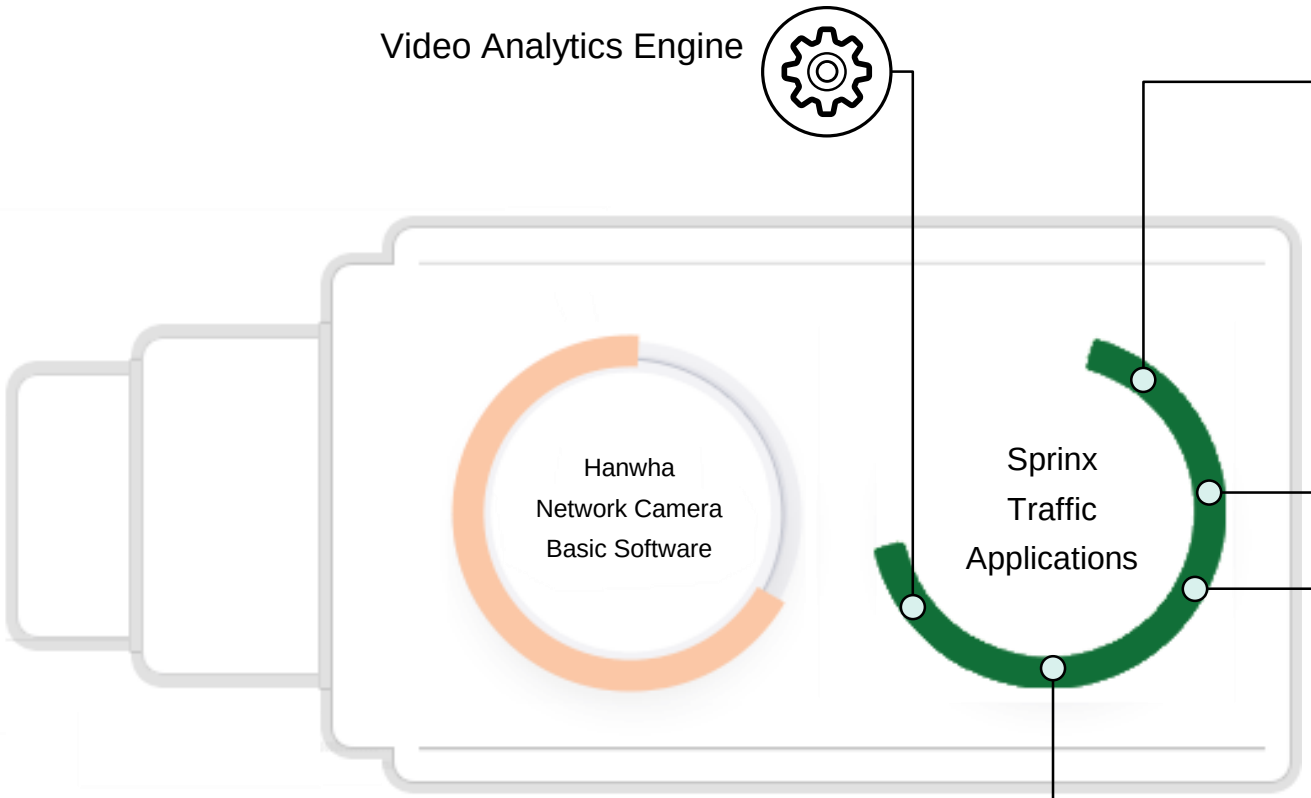

Video Analytics Engine

Web User Interface

On-board interface for the configuration of Video Analytics

Dashboard

Comprehensive Traffic Data Visualization

Event Journal

List of the events detected by the Engine with all the details about the alarm, snapshot included

Communication Interface

Multiple methods to communicate Events and Traffic Data to 3rd party software

TRAFFIC Flow

Edge-based application for Traffic Flow analysis

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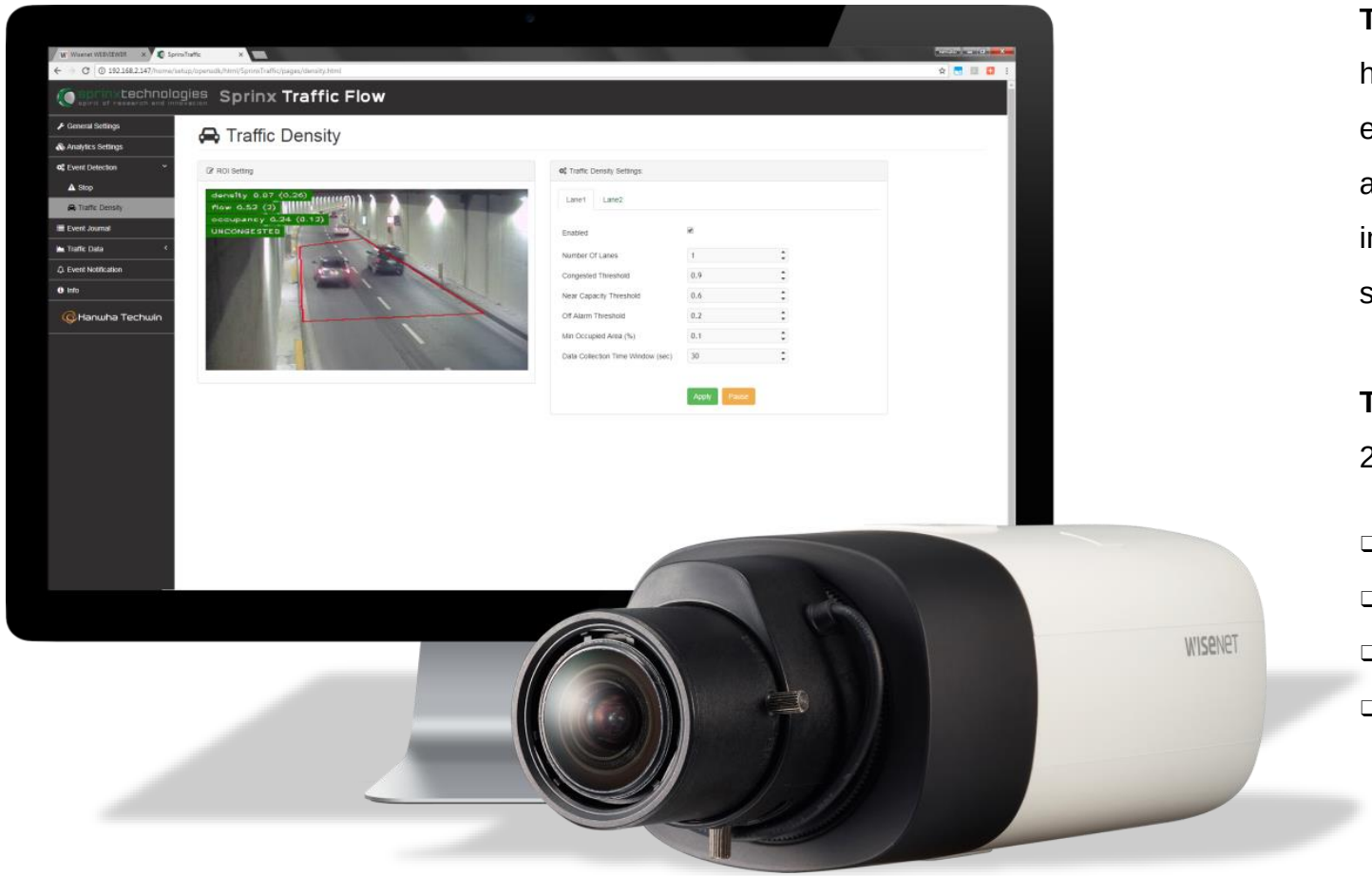


TRAFFIC Flow is an edge-based application on Hanwha Techwin high definition cameras based on WisenetIII and Wisenet5 chipset. It enables the detection of stopped vehicle, it estimates the traffic flow and automatically notifies alarms for slowdown and congestion, thus increasing the capabilities of a standard IP-based video surveillance system.

TRAFFIC Flow application enables simultaneous event detection on 2 independent lanes (zones).

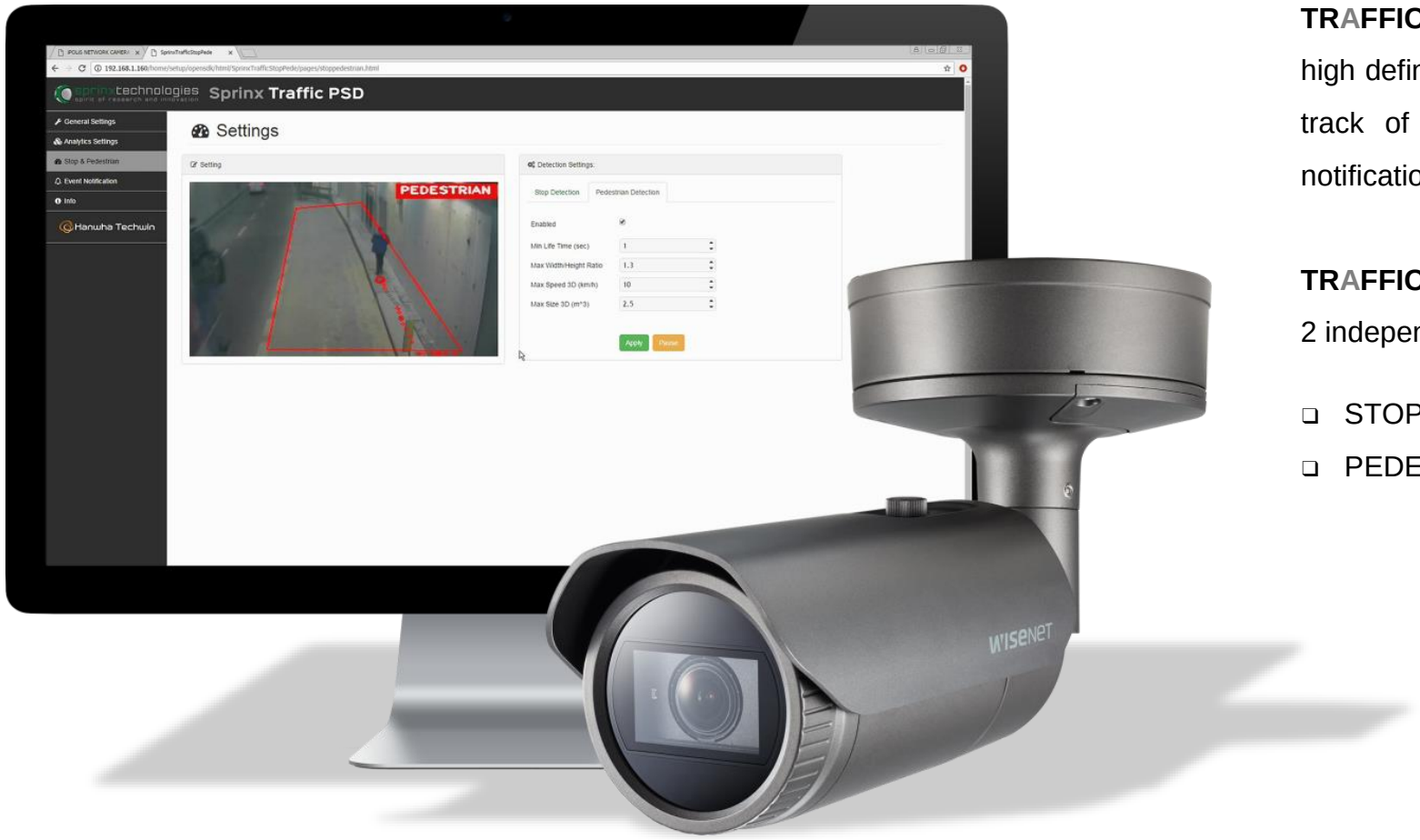
- ❑ STOPPED VEHICLE
- ❑ TRAFFIC SLOWDOWN
- ❑ TRAFFIC CONGESTION / QUEUE
- ❑ TRAFFIC DENSITY

STEP APPLICATION PARTNER AUTHORIZED
Hanwha Techwin

WISENET X series

TRAFFIC PSD

Edge-based application for Stopped Vehicle and Pedestrian



TRAFFIC PSD is an edge-based application on Hanwha Techwin high definition cameras based on Wisenet5 chipset. It allows to keep track of vehicles and pedestrian providing quick detection and notification in case of stopped vehicle and pedestrian presence.

TRAFFIC PSD application enables simultaneous event detection on 2 independent zones.

- ❑ STOPPED VEHICLE
- ❑ PEDESTRIAN

STEP APPLICATION PARTNER AUTHORIZED Hanwha Techwin

WISENET X series

TRAFFIC Data

Edge-based application for Traffic Data Collection

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TRAFFIC Data is an edge-based application on Hanwha Techwin high definition cameras based on WisenetIII and Wisenet5 chipset. It allows to keep track of vehicles moving in the camera field of view, providing information about counting, classification and average speed.

Focused for Smart City environment, it enables the collection of statistic data about vehicle flow.

TRAFFIC Data enables simultaneous data collection on 2 independent lanes (also in both directions of travel).

- VEHICLE COUNTING
- VEHICLE CLASSIFICATION
  - Motorbikes
  - Cars
  - Trucks & Buses
- AVERAGE SPEED
- TRAFFIC DENSITY
- ORIGIN / DESTINATION MATRIX

STEP
APPLICATION PARTNER
AUTHORIZED
Hanwha Techwin

wisenet X series

TRAFFIC AID

Edge-based application with full AID features

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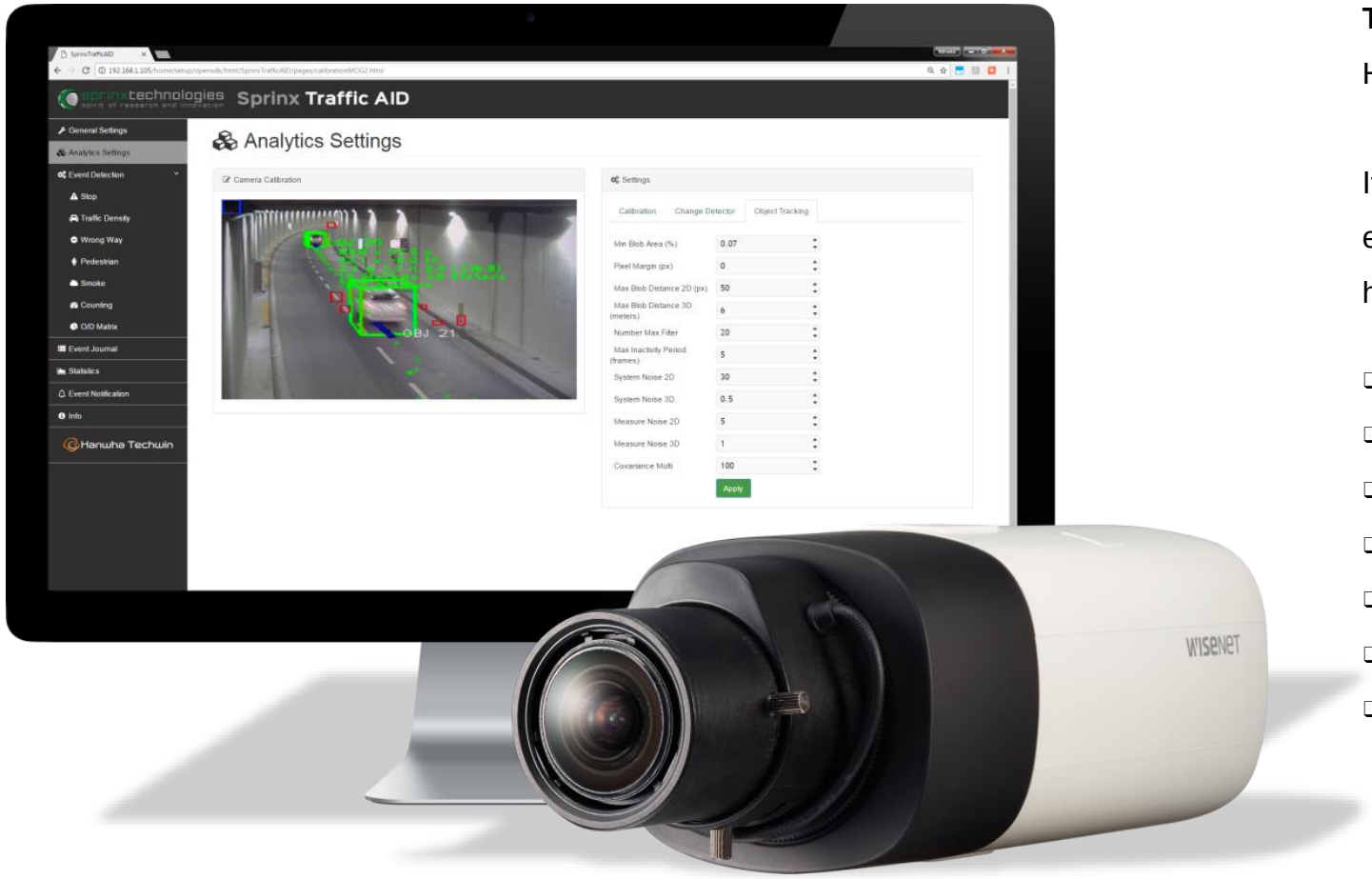

TRAFFIC AID is an edge-based application running on-board all Hanwha Techwin high definition Wisenet X H.265 cameras.

It's a full AID solution that allows reliable detection of incidents and events in traffic flow on critical infrastructure such as roads, highways, tunnels and intersections.

- STOPPED VEHICLE
- TRAFFIC SLOWDOWN & CONGESTION (QUEUE)
- WRONG WAY driver
- PEDESTRIAN
- SMOKE / LOSS OF VISIBILITY
- SPILLED CARGO
- TRAFFIC DATA
  - VEHICLE COUNTING & CLASSIFICATION
  - AVERAGE SPEED
  - TRAFFIC DENSITY
  - ORIGIN/DESTINATION MATRIX

STEP APPLICATION PARTNER AUTHORIZED
Hanwha Techwin

wisenet X series

Basic
PTZ
Video & Audio
Network
Event
Analytics
System
Open Platform
Open Platform

Open Platform

... Install

Version : 3.00

Application manager

No.	Application name	Status	Setup
1	SprinxTraffic Installed date : 2017-10-18 T 17:35:00 Version : 1.20 Uninstall Go App	Running Stop Health	Priority Low Medium High Auto start Enable Apply

Total: 1

Wisenet WEBVIEWER | SprinxTraffic

192.168.2.147/home/setup/opensdk/html/SprinxTraffic/pages/index.html

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Sprinx Traffic AID

- General Settings
- Analytics Settings
- Event Detection
- Event Journal
- Traffic Data
- Event Notification
- Info

Hanwha Techwin

General Settings

Live View

Settings

Enable Analytics | Database

Camera Name	Camera-2.147
Lane 1 Name	Lane1
Lane 2 Name	Lane2
Statistics Period (minutes)	15

Apply

Stop App | Export Conf. | Import Conf.

Wisenet WEBVIEWER | SprinxTraffic

192.168.2.147/home/setup/opensdk/html/SprinxTraffic/pages/index.html

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Sprinx Traffic AID

- General Settings
- Analytics Settings
- Event Detection
- Event Journal
- Traffic Data
- Event Notification
- Info

Hanwha Techwin

General Settings

Live View

Settings

Enable Analytics | Database

DataBase Period (days) 15

Apply | Download DB | Erase DB

Wisenet WEBVIEWER | SprinxTraffic

192.168.2.147/home/setup/opensdk/html/SprinxTraffic/pages/calibration.html

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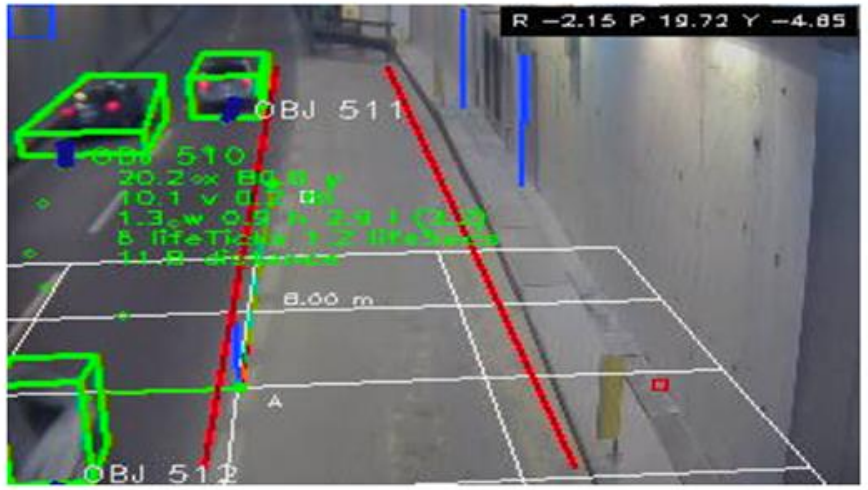
Sprinx Traffic AID

- General Settings
- Analytics Settings
- Event Detection
- Event Journal
- Traffic Data
- Event Notification
- Info

Hanwha Techwin

Analytics Settings

Camera Calibration



Settings

Calibration | Change Detector | Object Tracking

3D Calibration: Disabled / Enabled

3D Calibration is required for vehicle classification!!

Use Camera Height

Lateral Mode

Calibration Elements: Line A1 / Line A2 / Line B1 / Line B2 / Ruler

Ruler Length (meters): 4

Apply

Wisenet WEBVIEWER | SprinxTraffic

192.168.2.147/home/setup/opensdk/html/SprinxTraffic/pages/calibration.html

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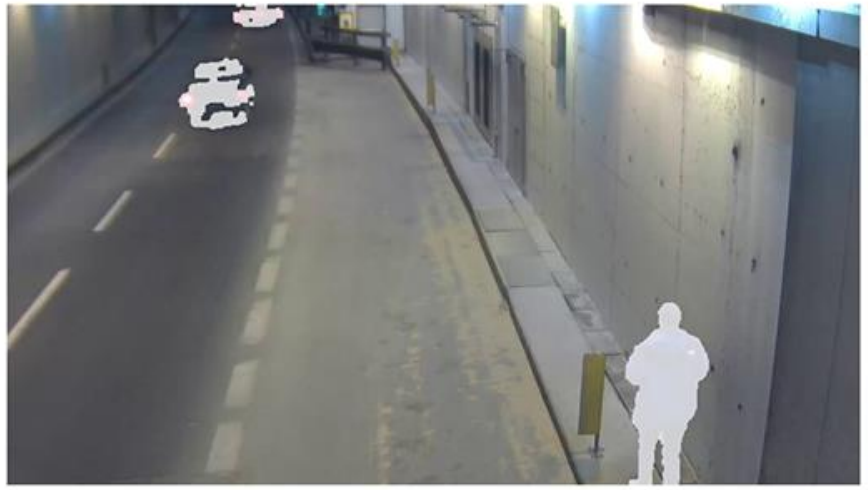
Sprinx Traffic AID

- General Settings
- Analytics Settings
- Event Detection
- Event Journal
- Traffic Data
- Event Notification
- Info

Hanwha Techwin

Analytics Settings

Camera Calibration



Settings

Calibration | Change Detector | Object Tracking

Morph Size (px)	1
Denoise Size (px))	0
History (frame)	50
Number Of Mixture	3
Background Ratio (%)	0.7
Variance Threshold	50
Initial Variance	15
Min Variance	5
Max Variance	15
CT	0.25
Tau	0.7
Remove Bright Spots	

Apply | Toggle Backgnd

Wisenet WEBVIEWER | SprinxTraffic

192.168.2.147/home/setup/opensdk/html/SprinxTraffic/pages/calibration.html

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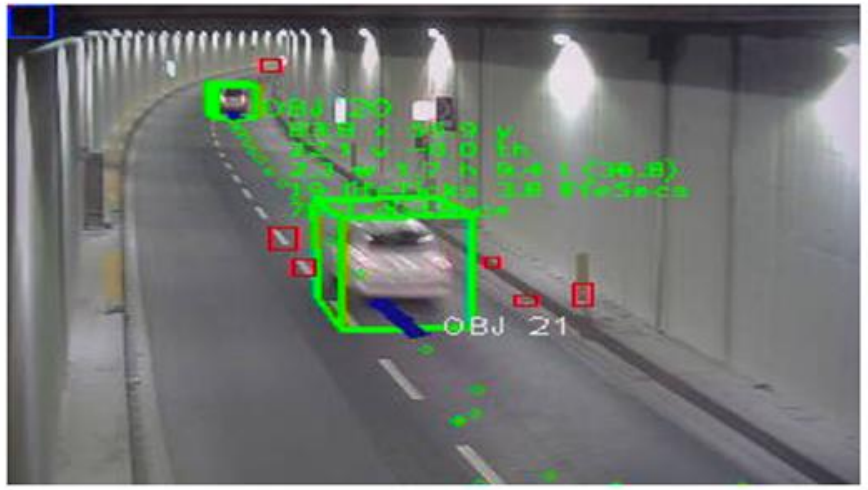
Sprinx Traffic AID

- General Settings
- Analytics Settings
- Event Detection
- Event Journal
- Traffic Data
- Event Notification
- Info

Hanwha Techwin

Analytics Settings

Camera Calibration



Settings

Calibration | Change Detector | Object Tracking

Min Blob Area (%)	0.07
Pixel Margin (px)	0
Max Blob Distance 2D (px)	50
Max Blob Distance 3D (meters)	4
Number Max Filter	20
Max Inactivity Period (frames)	5
System Noise 2D	30
System Noise 3D	0.5
Measure Noise 2D	5
Measure Noise 3D	1
Covariance Multi	100

Apply

Wisenet WEBVIEWER | SprinxTraffic

192.168.2.147/home/setup/opensdk/html/SprinxTraffic/pages/stop.html

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Sprinx Traffic AID

- General Settings
- Analytics Settings
- Event Detection
  - Stop
  - Traffic Density
  - Wrong Way
  - Pedestrian
  - Smoke
  - Counting
  - O/D Matrix
  - Lost Cargo
- Event Journal
- Traffic Data
- Event Notification
- Info

Hanwha Techwin

Stop

ROI Setting

Stop Detection Settings:

Lane1 | Lane2

Enabled	☑
Min Life Time (sec)	1
Min Stop Time (sec)	10
Max Speed 2D (px/sec)	20
Max Speed 3D (km/h)	10
Min Volume (m^3)	2
Vehicle Can Init Inside	☐
Vehicle Can Stop Outside	☐

Apply | Pause

Wisenet WEBVIEWER | SprinxTraffic

192.168.2.147/home/setup/opensdk/html/SprinxTraffic/pages/density.html

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Sprinx Traffic AID

- General Settings
- Analytics Settings
- Event Detection
  - Stop
  - Traffic Density
  - Wrong Way
  - Pedestrian
  - Smoke
  - Counting
  - O/D Matrix
  - Lost Cargo
- Event Journal
- Traffic Data
- Event Notification
- Info

Hanwha Techwin

Traffic Density

ROI Setting

Traffic Density Settings:

Lane1 | Lane2

Enabled	☑
Number Of Lanes	1
Congested Threshold	0.9
Near Capacity Threshold	0.6
Off Alarm Threshold	0.2
Min Occupied Area (%)	0.1
Data Collection Time Window (sec)	30

Apply | Pause

Wisenet WEBVIEWER | SprinxTraffic

192.168.2.147/home/setup/opensdk/html/SprinxTraffic/pages/wrongway.html

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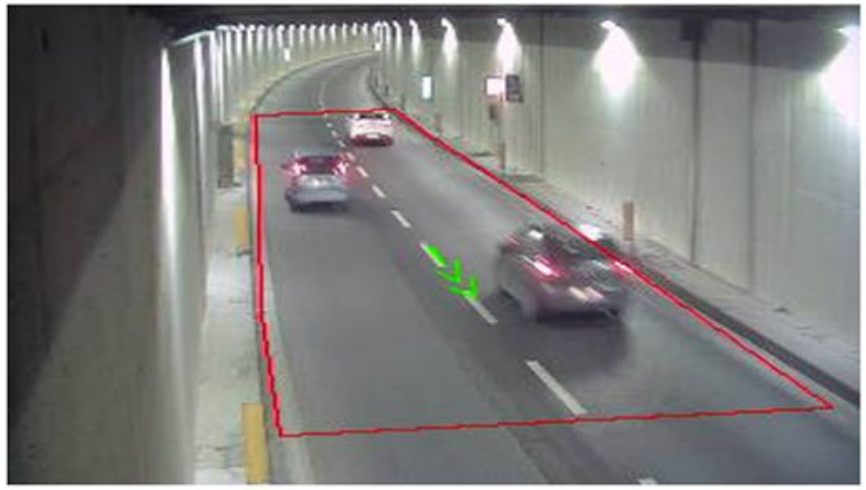
Sprinx Traffic AID

- General Settings
- Analytics Settings
- Event Detection
  - Stop
  - Traffic Density
  - Wrong Way
  - Pedestrian
  - Smoke
  - Counting
  - O/D Matrix
  - Lost Cargo
- Event Journal
- Traffic Data
- Event Notification
- Info

Hanwha Techwin

Wrong Way

ROI Setting



Wrong Way Settings:

Lane1 | Lane2

Enabled	☑
Direction Angle (degrees)	20
Max Tolerance (degrees)	45
Min Lifetime (sec)	1
Min Speed 2D (px/sec)	20
Min Speed 3D (km/h)	10
Min Trajectory Norm)	0.8
Full Trajectory	☐

Apply | Pause

Wisenet WEBVIEWER | SprinxTraffic

192.168.2.147/home/setup/opensdk/html/SprinxTraffic/pages/pedestrian.html

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Sprinx Traffic AID

- General Settings
- Analytics Settings
- Event Detection
  - Stop
  - Traffic Density
  - Wrong Way
  - Pedestrian
  - Smoke
  - Counting
  - O/D Matrix
  - Lost Cargo
- Event Journal
- Traffic Data
- Event Notification
- Info

Hanwha Techwin

Pedestrian

ROI Setting

Pedestrian Detection Settings:

Lane1 | Lane2

Enabled	☑
Min Life Time (sec)	1
Max Width/Height Ratio	0.8
Max Speed 3D (km/h)	10
Max Size 3D (m^3)	2

Apply | Pause

Wisenet WEBVIEWER | SprinxTraffic

192.168.2.147/home/setup/opensdk/html/SprinxTraffic/pages/smoke.html

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Sprinx Traffic AID

- General Settings
- Analytics Settings
- Event Detection
  - Stop
  - Traffic Density
  - Wrong Way
  - Pedestrian
  - Smoke
  - Counting
  - O/D Matrix
  - Lost Cargo
- Event Journal
- Traffic Data
- Event Notification
- Info

Hanwha Techwin

Smoke

ROI Setting

Smoke Detection Settings:

Enabled

Threshold 70

Off Alarm Threshold 50

Apply

Wisenet WEBVIEWER | SprinxTraffic

192.168.2.147/home/setup/opensdk/html/SprinxTraffic/pages/counting.html

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Sprinx Traffic AID

- General Settings
- Analytics Settings
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  - Stop
  - Traffic Density
  - Wrong Way
  - Pedestrian
  - Smoke
  - Counting
  - O/D Matrix
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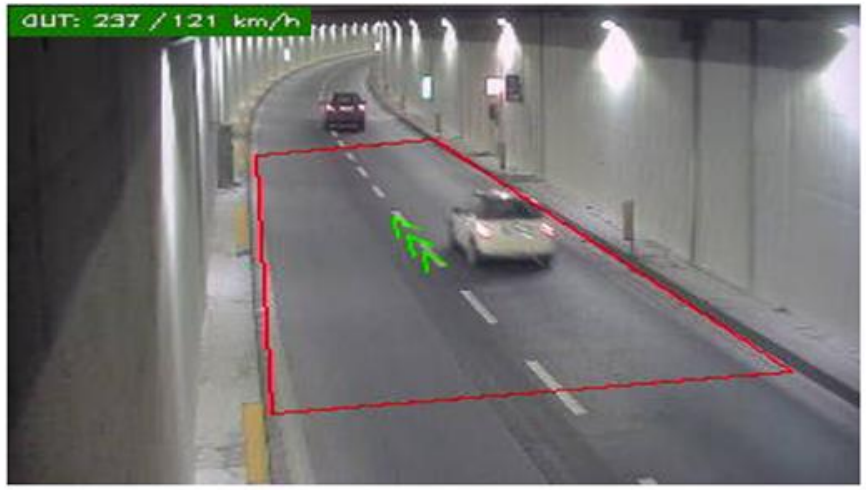
- Event Journal
- Traffic Data
- Event Notification
- Info

Hanwha Techwin

Counting

ROI Setting



Settings For Lane:

Lane1 | Lane2

Enabled	☑
Min Life (sec)	1
Min Distance 2D (px)	50
Min Distance 3D (meters)	15
Direction Angle (degrees)	25
Max Tolerance (degrees)	45
Both Directions	☐
Class Observation Window	2

Motorbike | Car | Truck

dimension in meters (Width, Height, Length)

Width	Height	Length
1	1	1

Apply | Pause

Wisenet WEBVIEWER | SprinxTraffic

192.168.2.147/home/setup/opensdk/html/SprinxTraffic/pages/order.html

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Sprinx Traffic AID

- General Settings
- Analytics Settings
- Event Detection
  - Stop
  - Traffic Density
  - Wrong Way
  - Pedestrian
  - Smoke
  - Counting
  - O/D Matrix
  - Lost Cargo
- Event Journal
- Traffic Data
- Event Notification
- Info

Hanwha Techwin

O/D Matrix

ROI Setting

O/D Matrix Settings:

Enabled

Min Life Time (sec) 1

Apply Pause

Wisenet WEBVIEWER | SprinxTraffic

192.168.2.147/home/setup/opensdk/html/SprinxTraffic/pages/losscargo.html

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Sprinx Traffic AID

- General Settings
- Analytics Settings
- Event Detection
  - Stop
  - Traffic Density
  - Wrong Way
  - Pedestrian
  - Smoke
  - Counting
  - O/D Matrix
  - Lost Cargo
- Event Journal
- Traffic Data
- Event Notification
- Info

Hanwha Techwin

Lost Cargo

ROI Setting

Lost Cargo Detection Settings:

Lane1 | Lane2

Enabled	☑
Min Life Time (sec)	1
Max Speed 2D (px/sec)	100
Max Speed 3D (km/h)	5
Min Volume 3D (m^3)	0.1
Max Volume 3D (m^3)	1
Min Size 2D (px^23)	50
Max Size 2D (px^2)	500

Apply | Pause

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Sprinx Traffic AID

General Settings
Analytics Settings
Event Detection
Event Journal
Traffic Data
Event Notification
Info
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Event Journal

Filter Settings

Event Type: Stop, Queue, Wrong Way, Pedestrian, Smoke, Lost Cargo

Period: From: 13-06-2017 00:00 To: 13-06-2017 17:50

Extra Data: View

Apply

Event List

Show 10 entries Search:

COUNT	TIME	ID	TYPE	IMAGE
2	13-06-2017 07:30:54Z	1084	Stop	
3	13-06-2017 07:30:43Z	1083	Pedestrian	
5	13-06-2017 07:27:44Z	1081	Pedestrian	

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192.168.2.147/home/setup/opensdk/html/SprinxTraffic/pages/statistics.html

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Sprinx Traffic AID

- General Settings
- Analytics Settings
- Event Detection
- Event Journal
- Traffic Data
  - Counting & Classification
  - Traffic Density
  - Origin/Destination
- Event Notification
- Info

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Counting & Classification

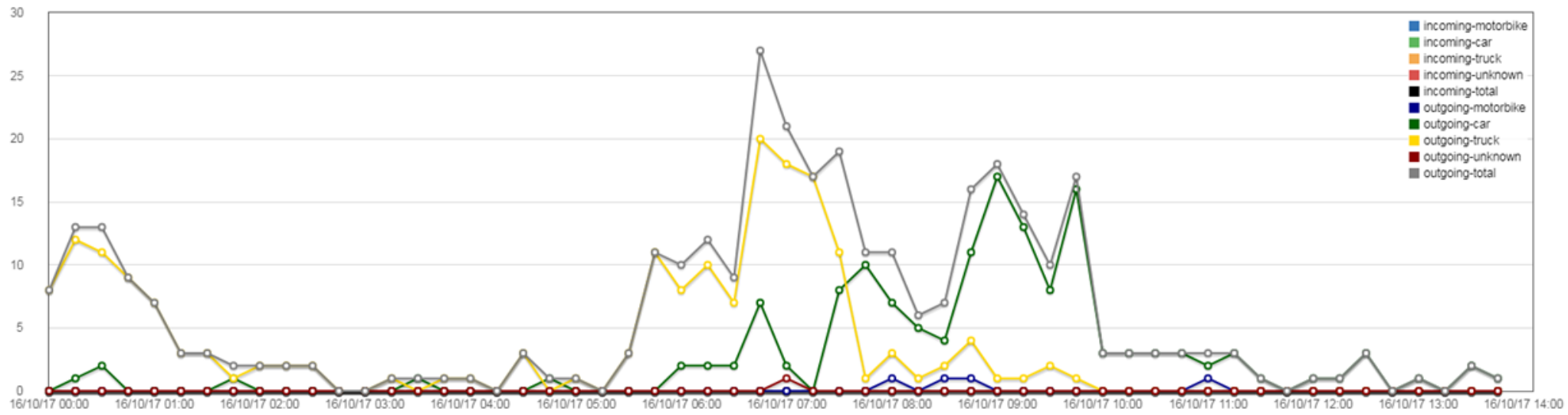
Filter Settings

Lane	(•) Lane 1 ( ) Lane 2
Direction	[x] Incoming [x] Outgoing
Vehicle Class	[x] Motorbike [x] Car [x] Truck [x] Unknown [x] Total
Period	From: 16-10-2017 00:00 To: 16-10-2017 14:05
Chart Type	(•) Line ( ) Pie

Apply | Download .CSV

0 - 4	MOTORBIKES
0 - 147	CARS
0 - 188	TRUCKS/BUSES
0 - 1	UNKNOWN

Vehicle Counting by Class

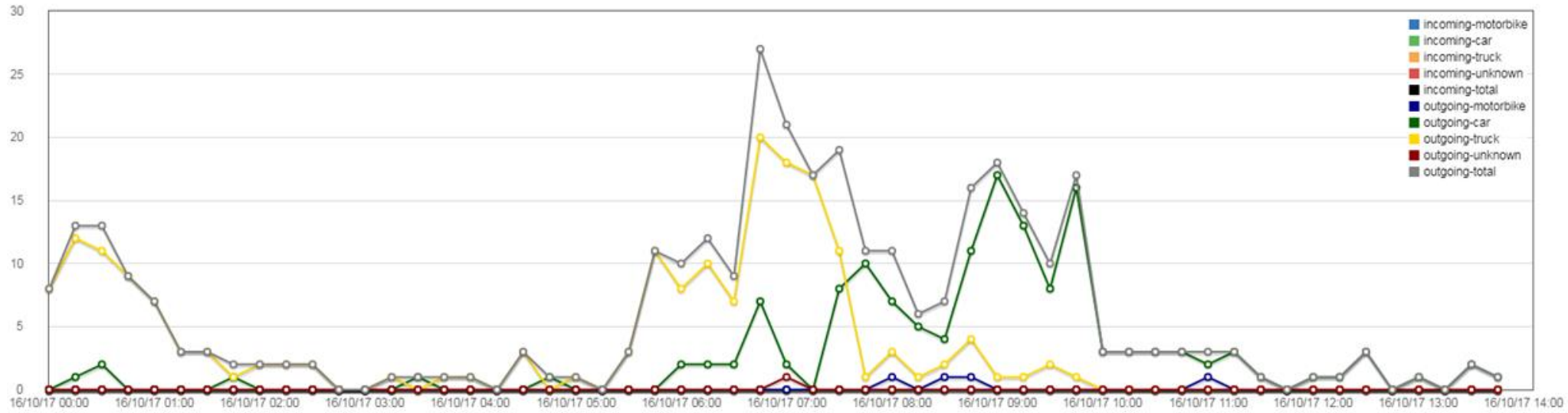


Wisenet WEBVIEWER | SprinxTraffic

192.168.2.147/home/setup/opensdk/html/SprinxTraffic/pages/statistics.html

Hanwha Techwin

Vehicle Counting by Class



Average Speed

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Sprinx Traffic AID

- General Settings
- Analytics Settings
- Event Detection
- Event Journal
- Traffic Data
  - Counting & Classification
  - Traffic Density
  - Origin/Destination
- Event Notification
- Info

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Counting & Classification

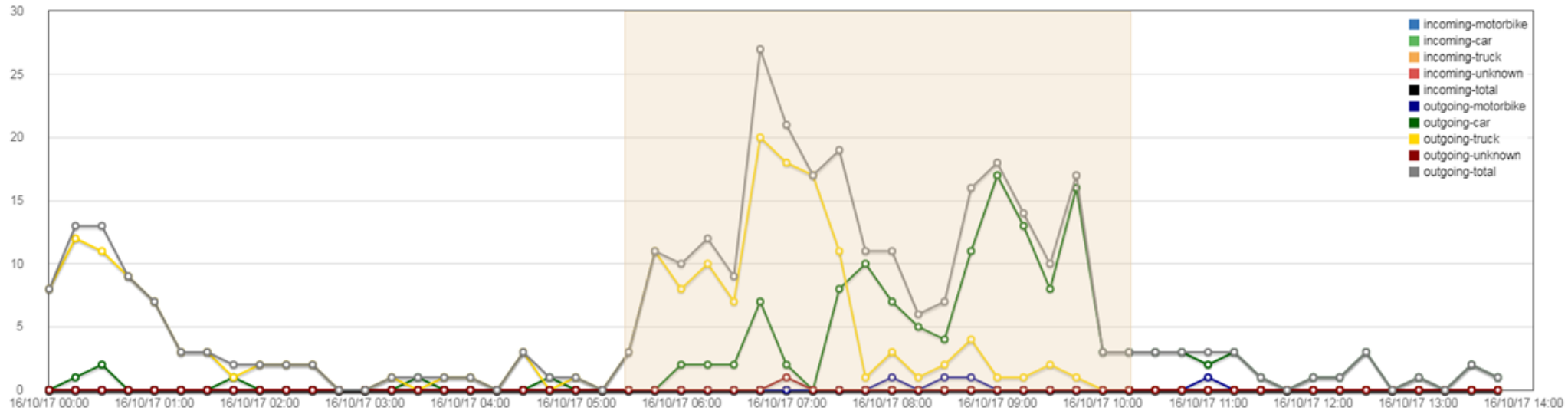
Filter Settings

Lane	(•) Lane 1 ( ) Lane 2
Direction	[x] Incoming [x] Outgoing
Vehicle Class	[x] Motorbike [x] Car [x] Truck [x] Unknown [x] Total
Period	From: 16-10-2017 00:00 To: 16-10-2017 14:05
Chart Type	(•) Line ( ) Pie

Apply | Download .CSV

0 - 4	MOTORBIKES
0 - 147	CARS
0 - 188	TRUCKS/BUSES
0 - 1	UNKNOWN

Vehicle Counting by Class



Wisenet WEBVIEWER | SprinxTraffic

192.168.2.147/home/setup/opensdk/html/SprinxTraffic/pages/statistics.html

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Sprinx Traffic AID

- General Settings
- Analytics Settings
- Event Detection
- Event Journal
- Traffic Data
  - Counting & Classification
  - Traffic Density
  - Origin/Destination
- Event Notification
- Info

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Counting & Classification

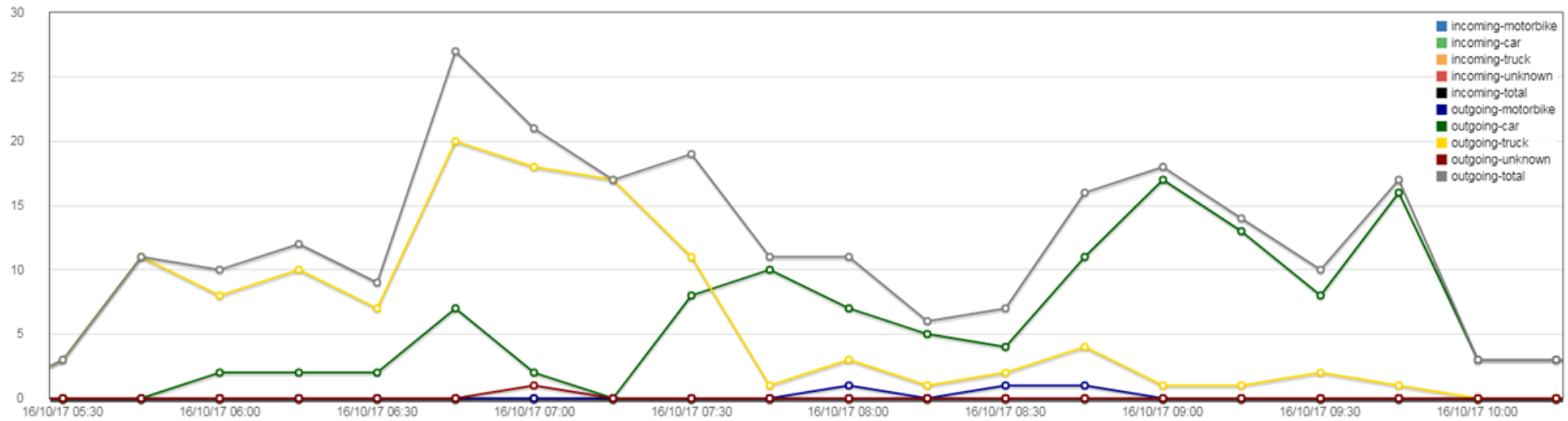
Filter Settings

Lane	Lane 1 / Lane 2
Direction	Incoming / Outgoing
Vehicle Class	Motorbike / Car / Truck / Unknown / Total
Period	From: 16-10-2017 00:00 To: 16-10-2017 14:05
Chart Type	Line / Pie

Apply | Download .CSV

0 - 4	MOTORBIKES
0 - 147	CARS
0 - 188	TRUCKS/BUSES
0 - 1	UNKNOWN

Vehicle Counting by Class



Wisenet WEBVIEWER | SprinxTraffic

192.168.2.147/home/setup/opensdk/html/SprinxTraffic/pages/statisticsDensity.html

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Sprinx Traffic AID

- General Settings
- Analytics Settings
- Event Detection
- Event Journal
- Traffic Data
  - Counting & Classification
  - Traffic Density
  - Origin/Destination
- Event Notification
- Info

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Traffic Density

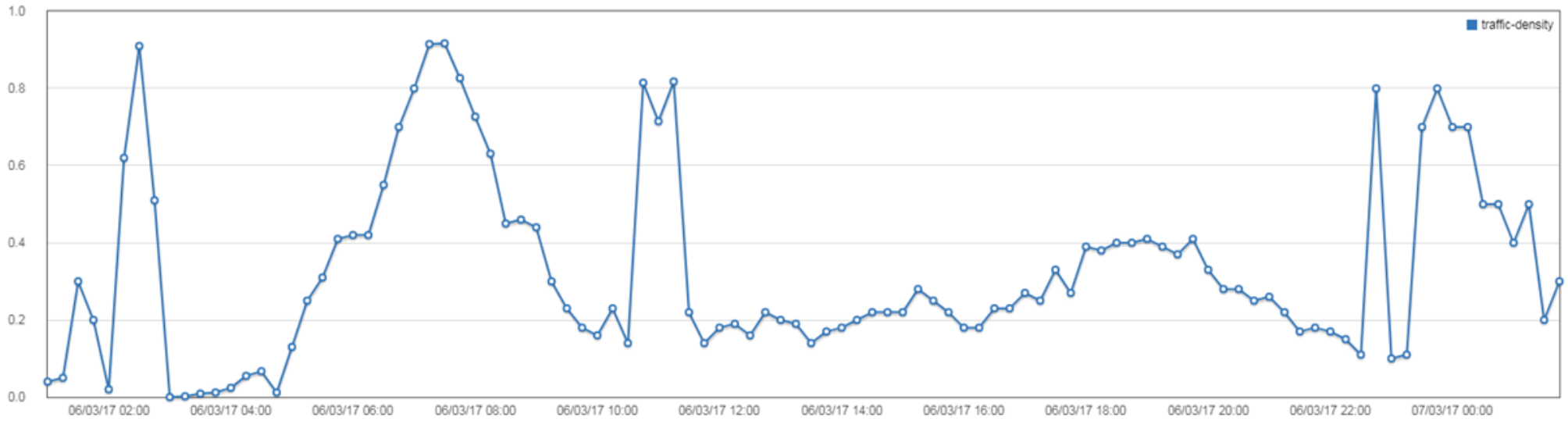
Filter Settings

Lane: Lane 1 / Lane 2

Period: From: 06-03-2017 01:00 To: 07-03-2017 01:45

Apply | Download .CSV

Traffic Density



Wisenet WEBVIEWER | SprinxTraffic

192.168.2.147/home/setup/opensdk/html/SprinxTraffic/pages/statisticsOD.html

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Sprinx Traffic AID

- General Settings
- Analytics Settings
- Event Detection
- Event Journal
- Traffic Data
  - Counting & Classification
  - Traffic Density
  - Origin/Destination
- Event Notification
- Info

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O/D Matrix

Filter Settings

Period

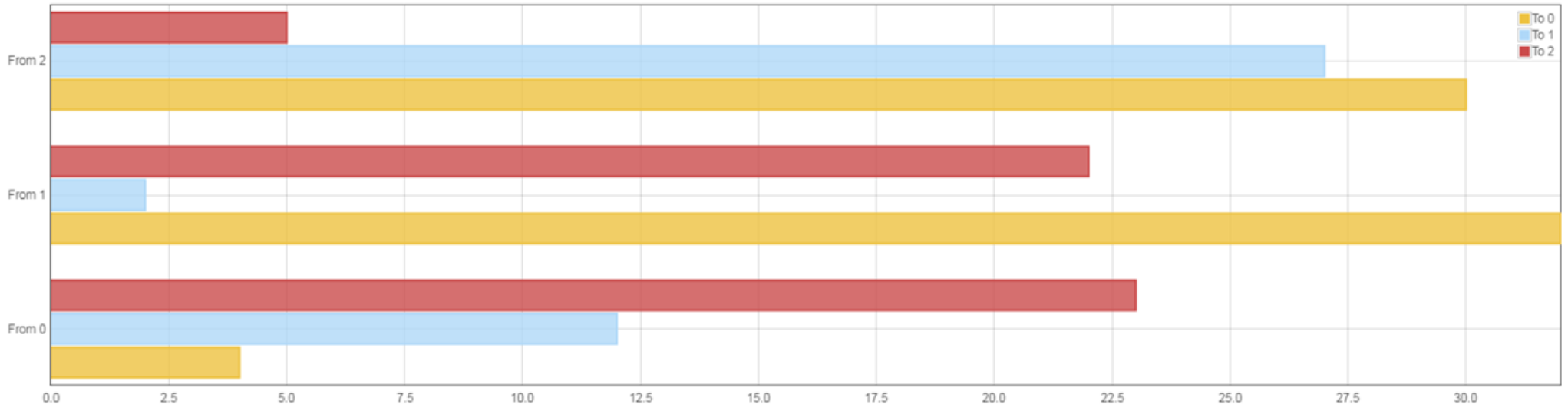
From: 06-03-2017 01:00

To: 07-03-2017 01:45

Apply | Download .CSV

Live View

Origin/Destination



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Sprinx Traffic AID

General Settings
Analytics Settings
Event Detection
Event Journal
Traffic Data
Event Notification
Info
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Event Notification

Settings

Remote Server | FTP

Enabled	☐
Name	Remote Server
IP Address	0.0.0.0
IP Port	0
Message Format	◉ JSON ○ XML ○ CSV ○ Sprinx Format ○ Custom Format
Send Image	☐
Custom Format	%Time%,%FromIP%,%CameraName%,%Lane%,%Type%,%Status%

Legend:

%Time%	= Event Timestamp
%FromIP%	= IP Address
%CameraName%	= Camera Name
%Lane%	= Lane Name
%Type%	= Event Type
%Status%	= Event Status

Apply | Test

Wisenet WEBVIEWER | SprinxTraffic

192.168.2.147/home/setup/opensdk/html/SprinxTraffic/pages/event-messages.html

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Sprinx Traffic AID

- General Settings
- Analytics Settings
- Event Detection
- Event Journal
- Traffic Data
- Event Notification
- Info

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Event Notification

Settings

Remote Server | FTP

Enabled

File Mode: Infinite (Data/Time Name) / Finite Circular (Numeric Name)

Circular Max Number: 100

Transfer Schedule: Mode: Daily; Day: Sunday; Hour: 0; Min: 0

You can configure FTP settings on the camera page

Apply | Test

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Sprinx Traffic AID

General Settings
Analytics Settings
Event Detection
Event Journal
Traffic Data
Event Notification
Info

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Info

About

Name	SprinxTraffic_AID
MAC	00-16-6C-C2-F5-A7
SN	ZECG6V2J20006KD
Activation Code	0E5A6C531118C4C1CE43A0151762EB59
Status	REGISTERED
Version	1.20
Installation Date	Wed Oct 18 17:35:00 2017

TRAFFIC Applications

Edge-based applications on Hanwha Techwin cameras

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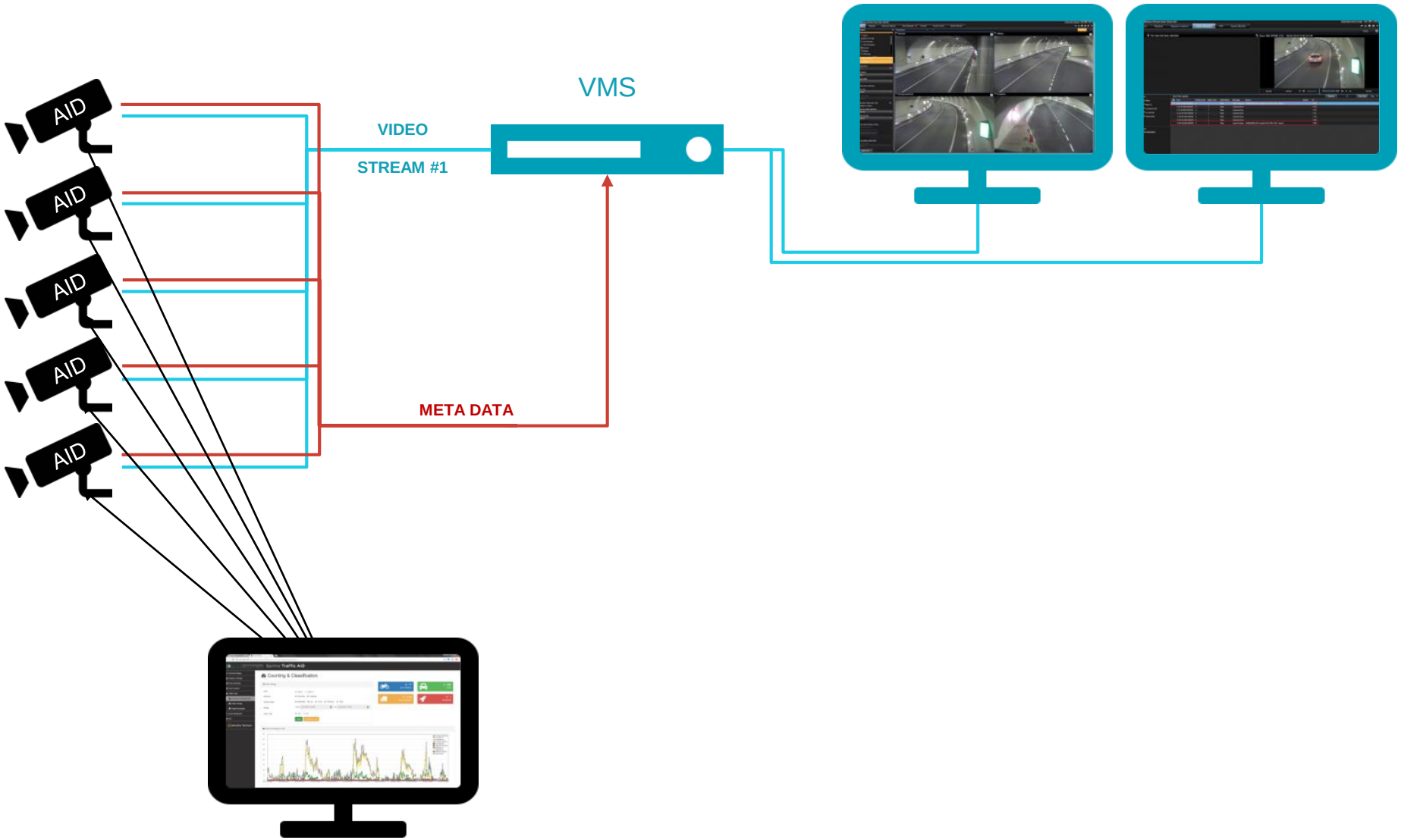

GECKO Traffic Hub

Software applications for collecting and aggregating traffic data

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GECKO Traffic Hub is a software application for collecting and aggregating data from multiple network-connected cameras running Sprinx TRAFFIC Applications on board. Through its web user interface, it enables a quick overview of all traffic events detected by the cameras and provides comprehensive graphs about traffic data such as vehicle counting and average speed.

GECKO Traffic Hub includes a PDF exporting tool of the collected events, helpful for operators in evaluating the performances of the system.

In complex architectures GECKO Traffic Hub can work as a proxy server forwarding all the events collected from the cameras to 3rd party systems including SCADA, PSIM, ITS and VMS platforms. This features definitely simplifies the integration process avoiding the communication with every single camera connected on the network.

Data coming from multiple GECKOs Traffic Hub can also be displayed into a single cloud-ready data visualization platform called Sprinx **DRAGON** which provides interactive reports and dashboards performing detailed graphs and charts.

GECKO Traffic Hub

Software applications for collecting and aggregating traffic data

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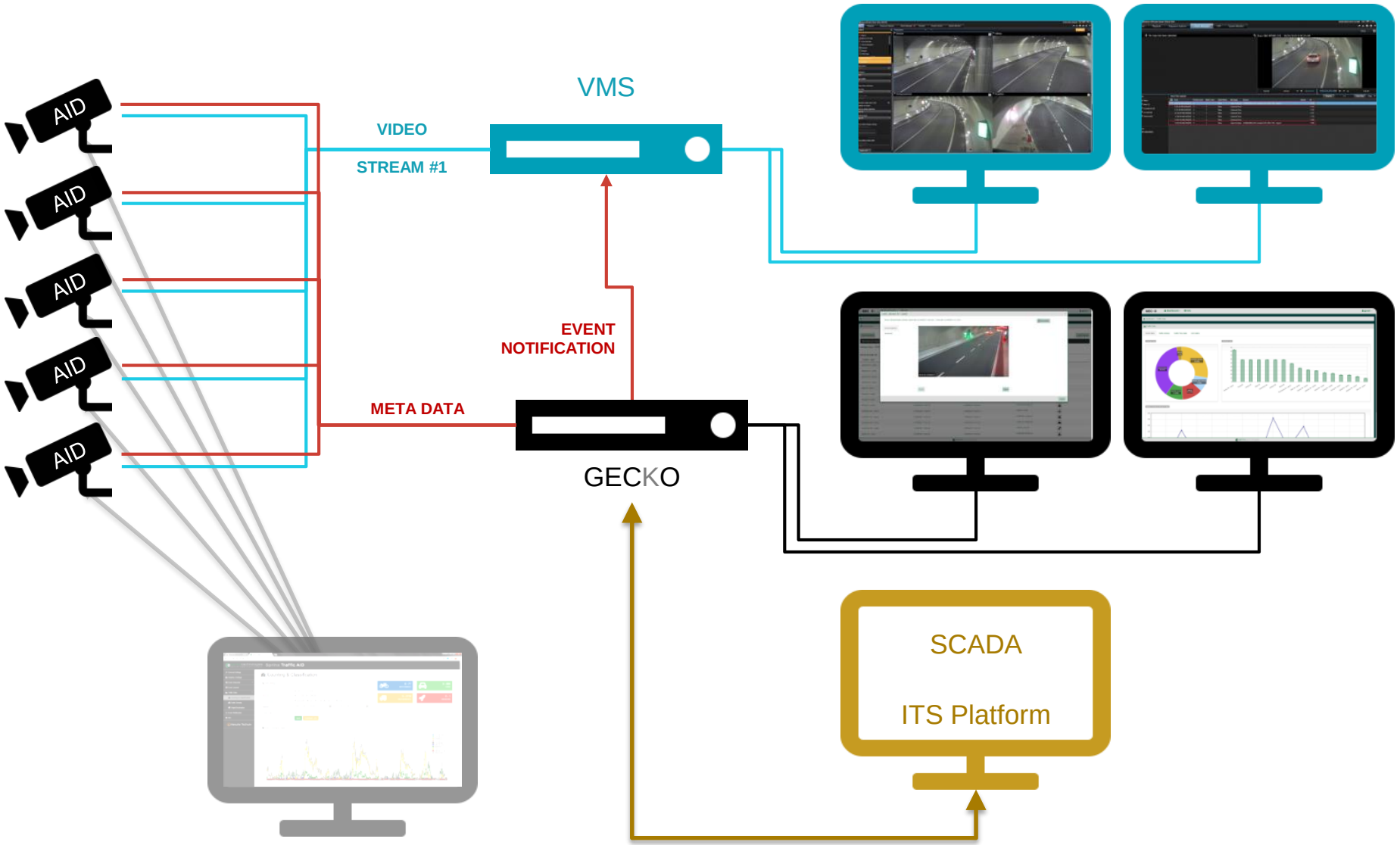

GECKO Traffic Hub

Software applications for collecting and aggregating traffic data

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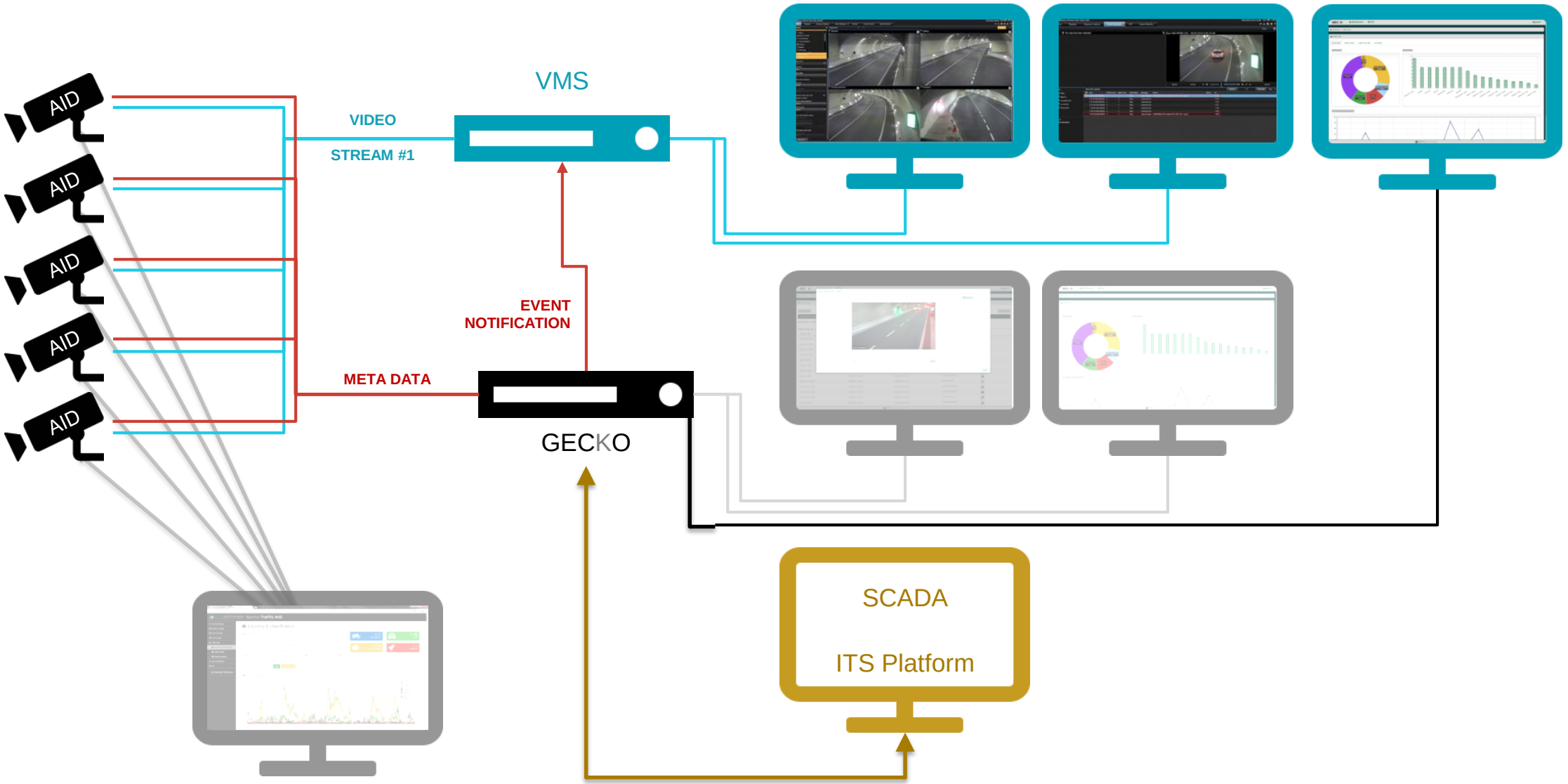

GECKO Traffic Hub & DRAGON

Software applications for collecting and aggregating traffic data

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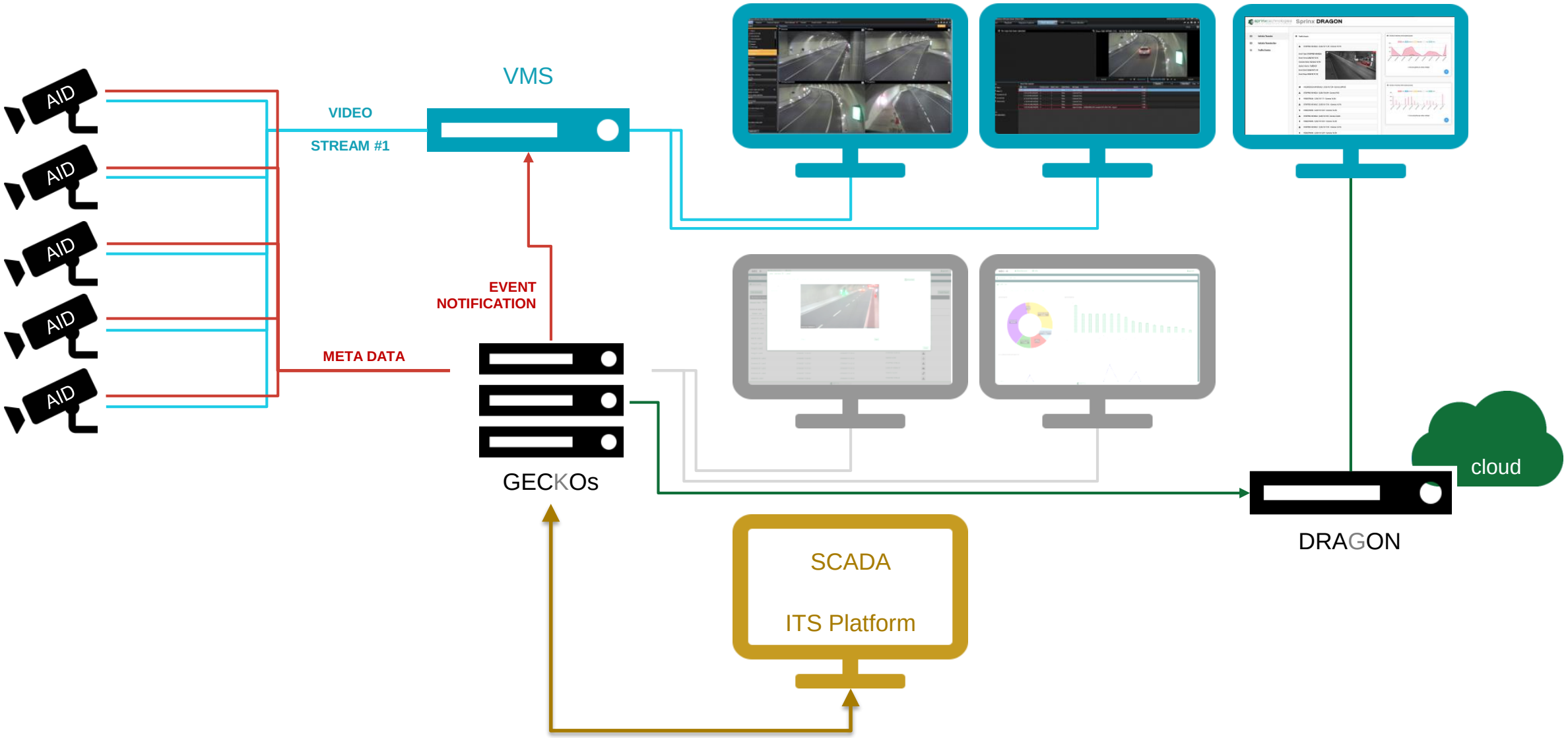

GECKO Traffic Hub

Software application for collecting and aggregating data

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	FREE	PRO-16	PRO-48
Number of Cameras	**4 Cameras**	**16 Cameras**	**48 Cameras**
Key Features	**DASHBOARD** **EVENT JOURNAL**	**DASHBOARD** **EVENT JOURNAL**	**DASHBOARD** **EVENT JOURNAL**
Communication Protocol	**TCP MESSAGES**	**TCP MESSAGES**	**TCP MESSAGES**
Additional Protocols		**OPC Server (DA)** **MODBUS** **MOXA ioLogik** **MIRASYS** **MILESTONE Analytics** **Wisenet WAVE**	**OPC Server (DA)** **MODBUS** **MOXA ioLogik** **MIRASYS** **MILESTONE Analytics** **Wisenet WAVE**

Camera Position

For Event Detection

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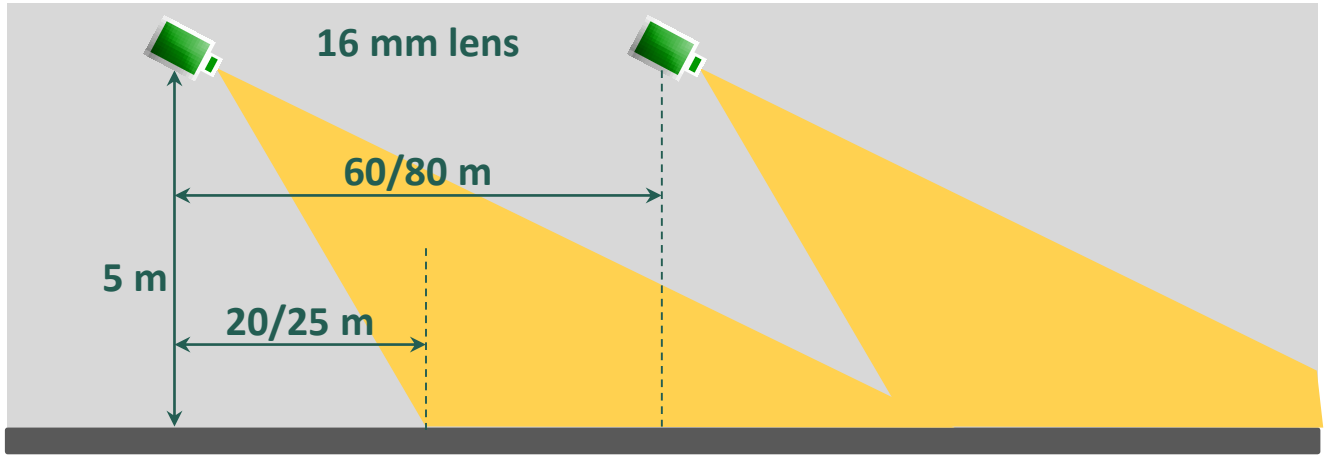
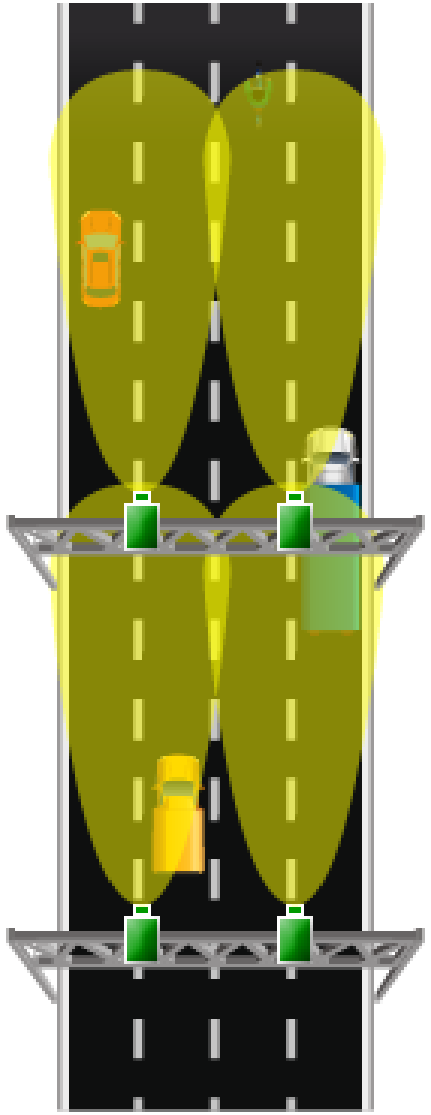
An adequate design, camera and lens selection, installation, configuration and, last but not least, maintenance of the entire video traffic analysis system is essential in order to achieve the best result in terms of AID performances.

it's recommended to install the camera only rear views of vehicles and in the middle of the carriageway to avoid the occlusion caused by heavy vehicles.

The traffic analysis system requires a tuning period, calculated in at-least three months, necessary to understand the real traffic conditions and consequently adapt the AID system.





Camera Position

For Traffic Data Collection

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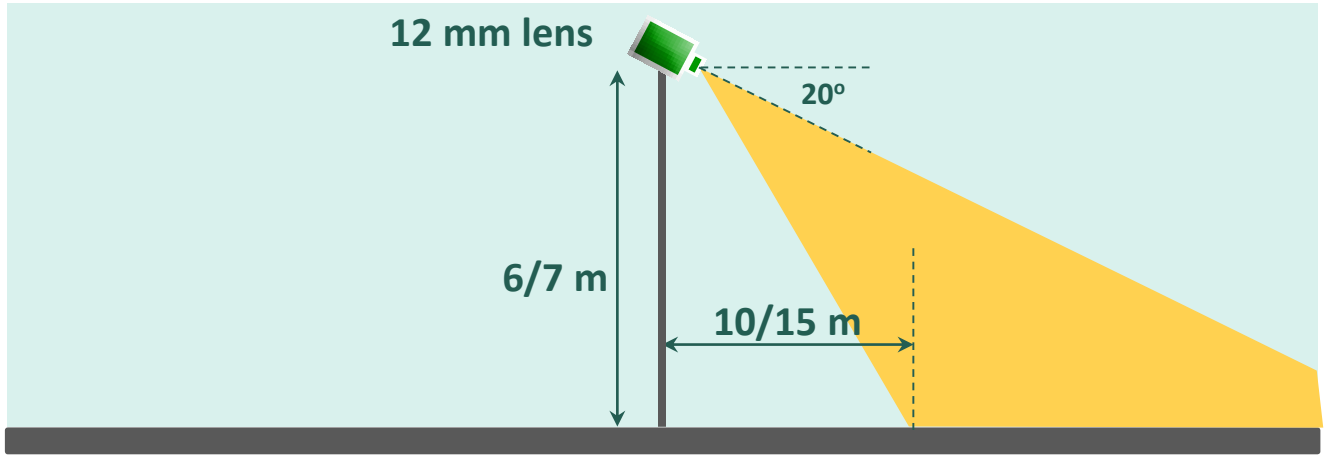
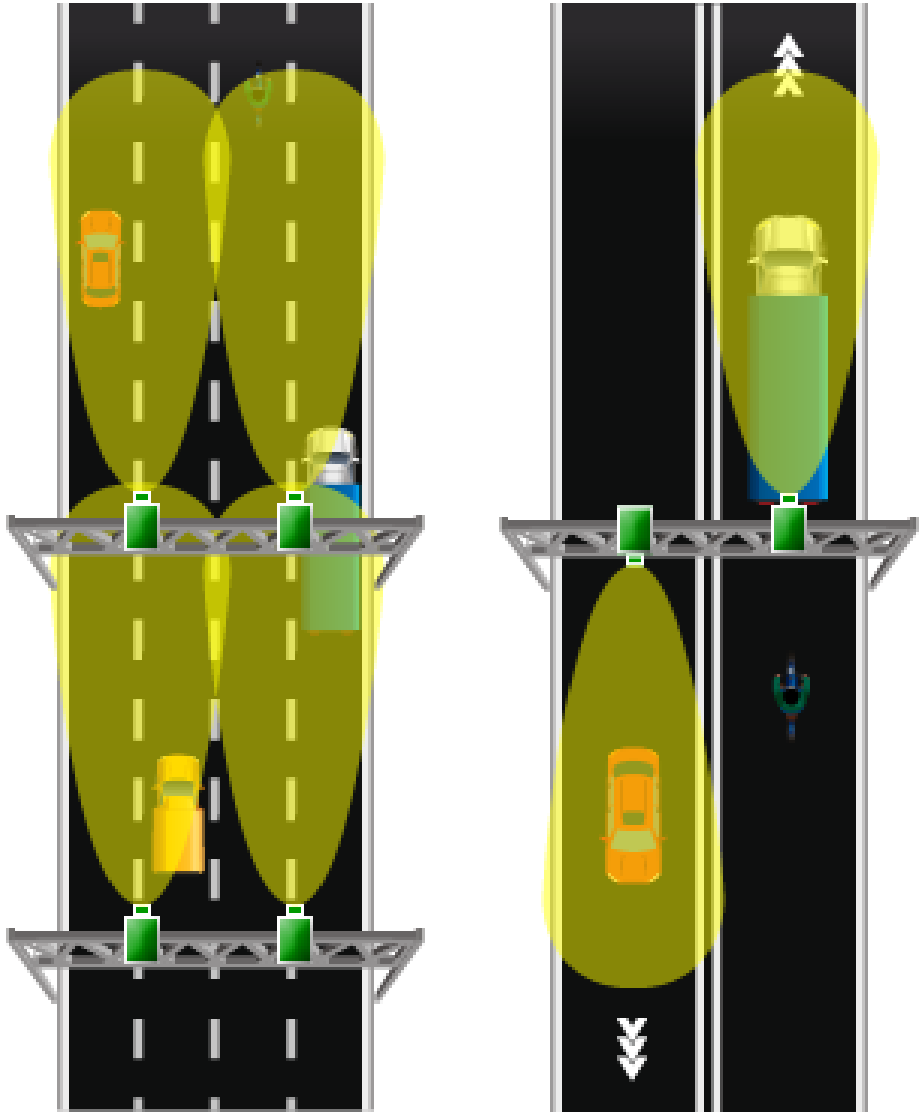
All the considerations above are valid also for Traffic Data Collection but the camera positioning should be slightly modified in order to reach the maximum performances that the system can provide.

For traffic data collection, it is suggested to use one camera for each lane. It's recommended to install the camera in the middle of the lane and to avoid the occlusions.

The conditions of the environment, the illumination quality, the weather conditions and the traffic can also influence the performances of the AID system.





THANK YOU

WISENET 2019 Product Line-up

Hanwha Techwin

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