



**Spirit of Research and Innovation**

# | Who We Are?



*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



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



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



2009

SPRINX TECHNOLOGIES is founded in Milan on October 2, 2009



2010

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 ]

2011



2012

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 ]

2013

# Company Highlights

A snapshot of Sprinx milestones



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 ]



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



2014

2015

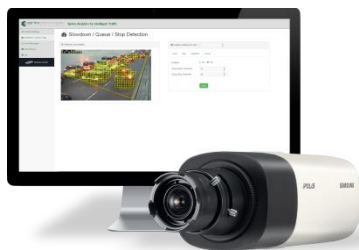
2016

2017

2018

SX-VISIONTRAFFIC 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 ]



WiseNet III

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



wisenet X series

TRAFFIX 3.0 is released

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

**27 man-years**  
into development of  
AID Technology

**6 man-years**  
into development of  
Edge solution



**sprinx**<sup>®</sup>  
technologies  
spirit of research and innovation

**1.700.000**  
meters of road  
equipped with Sprinx  
intelligent solutions

**6.500**  
AID channels all  
around Europe

**12.000**  
operating cameras  
for traffic control



# Automatic Incident Detection

# Mont Blanc Tunnel 1999 fire

On the morning of 24 March 1999, 38 people died when a Belgian transport truck carrying flour and margarine caught fire in the tunnel

*Directive 2004/54/CE on  
minimum safety requirements  
for tunnels in the Trans-  
European Road Network  
(29/04/2004)*

# SMART ROAD ◀

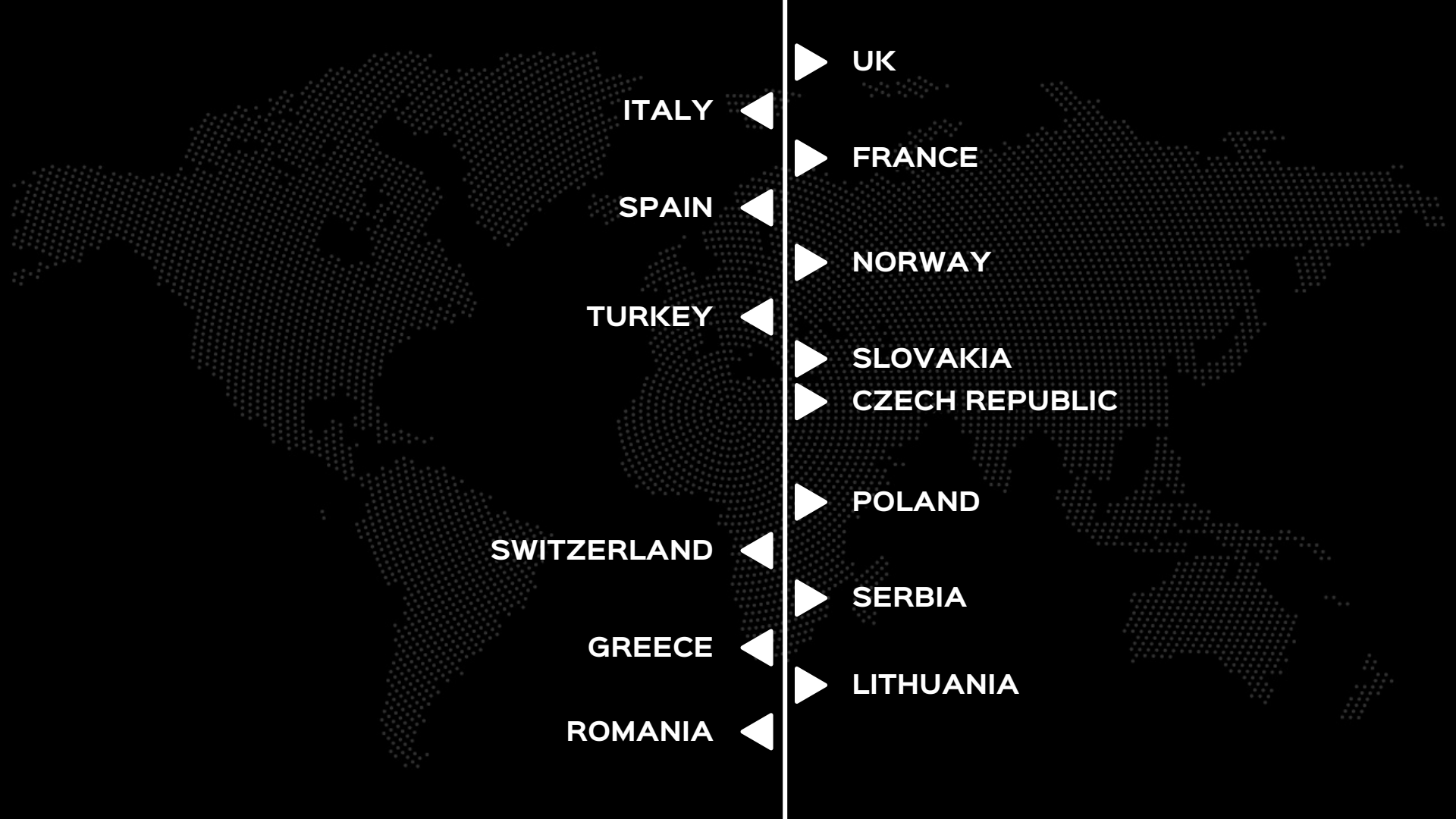
Tunnels  
Highways  
Bridges

Traffic Mobility  
Counter Terrorism  
Public Safety

# ▶ SMART CITY

Intersections/Roundabouts  
Traffic Lights  
Parking Lots





ITALY



UK

FRANCE

SPAIN



NORWAY

TURKEY



SLOVAKIA

CZECH REPUBLIC



POLAND

SWITZERLAND



SERBIA

GREECE



LITHUANIA

ROMANIA



USA  
MEXICO  
PERU  
CHILE  
COLOMBIA  
BRAZIL

ITALY  
SPAIN  
TURKEY  
SWITZERLAND  
GREECE  
ROMANIA

UK  
FRANCE  
NORWAY  
SLOVAKIA  
CZECH REPUBLIC  
POLAND  
SERBIA  
LITHUANIA

QATAR  
IRAN  
VIETNAM  
SINGAPORE  
PHILIPPINES  
INDONESIA  
MALAYSIA



**Video AID Solutions for  
Traffic Applications**

# Automatic Incident Detection

Event Detection & Traffic Data Collection



# Automatic Incident Detection

Event Detection & Traffic Data Collection



PARKING SPOT  
OCCUPANCY



LPR & ADR  
INTEGRATION



LOSS of VISIBILITY  
SMOKE



SLOWDOWN



PEDESTRIAN



TRAFFIC  
DENSITY



QUEUE



COUNTING &  
CLASSIFICATION



STOPPED  
VEHICLE



SPILLED CARGO



VEHICLE  
DISTANCE  
(time)



AVERAGE  
SPEED



WRONG WAY  
DRIVER



UNDERSPEED  
OVERSPEED



VEHICLE  
DISTANCE  
(space)



O/D MATRIX



UNSAFE LANE  
CHANGE

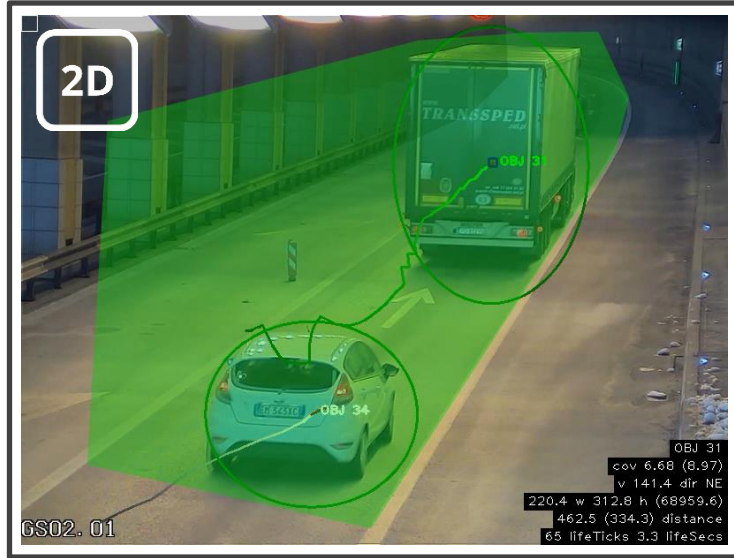


TRAFFIC LIGHT  
MANAGEMENT

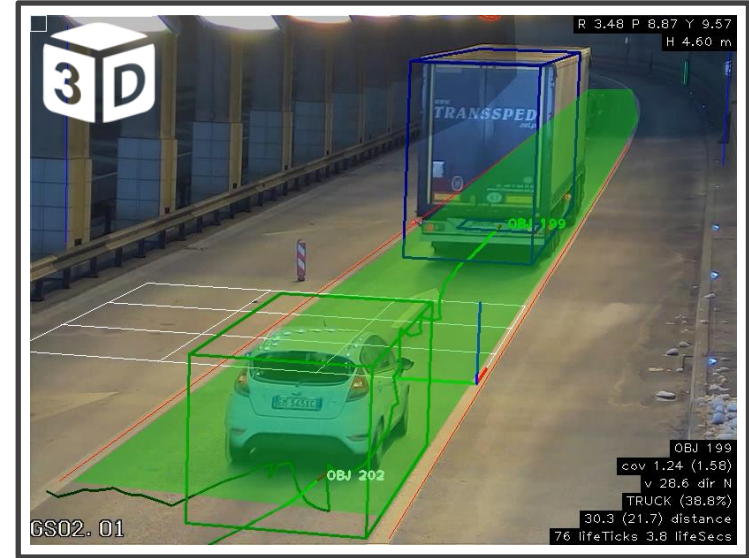


# Object Tracking

Comparison of technologies



- Video analysis of pixel blobs on the image plane
- Configuration of the min and max dimension to compensate the perspective
- The detection zones must include all the pixels in image plane where the object is moving (i.e. walls)

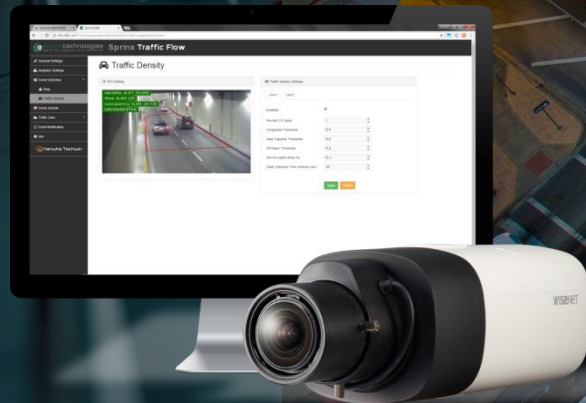
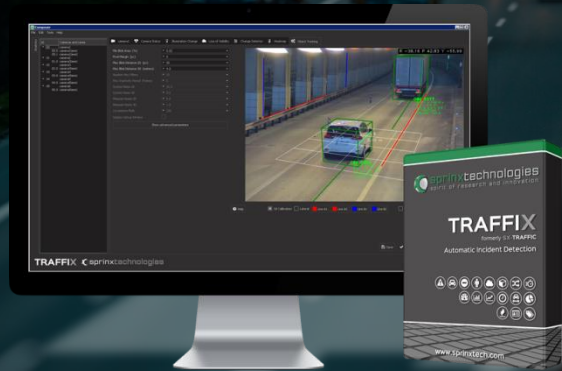


- Video analysis of 3D object (dimension, speed and direction)
- Moving objects maintain the same properties (i.e. speed and dimension) everywhere in the image
- The detection zones have to include only the road surface where the objects are moving

# SERVER ◀

# ▶ EDGE

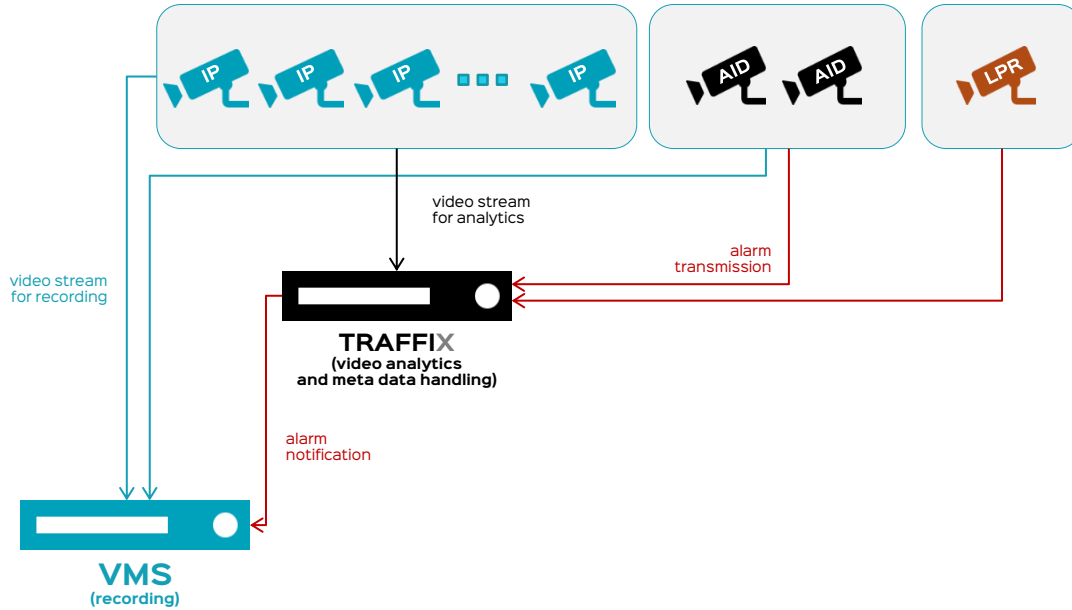
# ▶ HYBRID



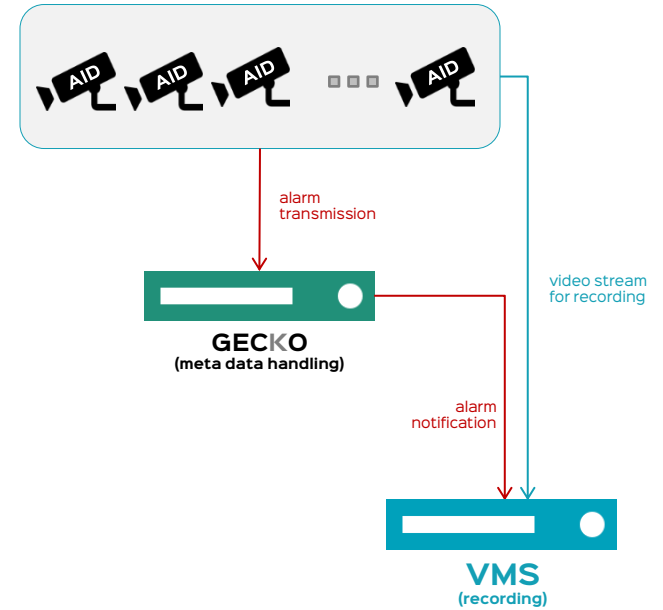
# Video AID Solutions

## System Architectures

### SERVER BASED - IBRIDO



### EDGE BASED







**sprinx**<sup>®</sup>  
technologies  
spirit of research and innovation

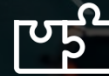
# Competitors

Improved image  
recognition

Faster calibration &  
setup

All AID functions running  
simultaneously across  
two lanes

Available solutions  
(Server / Edge)





# TRAFFIX

Server-based solution for Automatic Incident Detection

# TRAFFIX

Server-based solution for Automatic Incident Detection



**TRAFFIX** (formerly **SX-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.

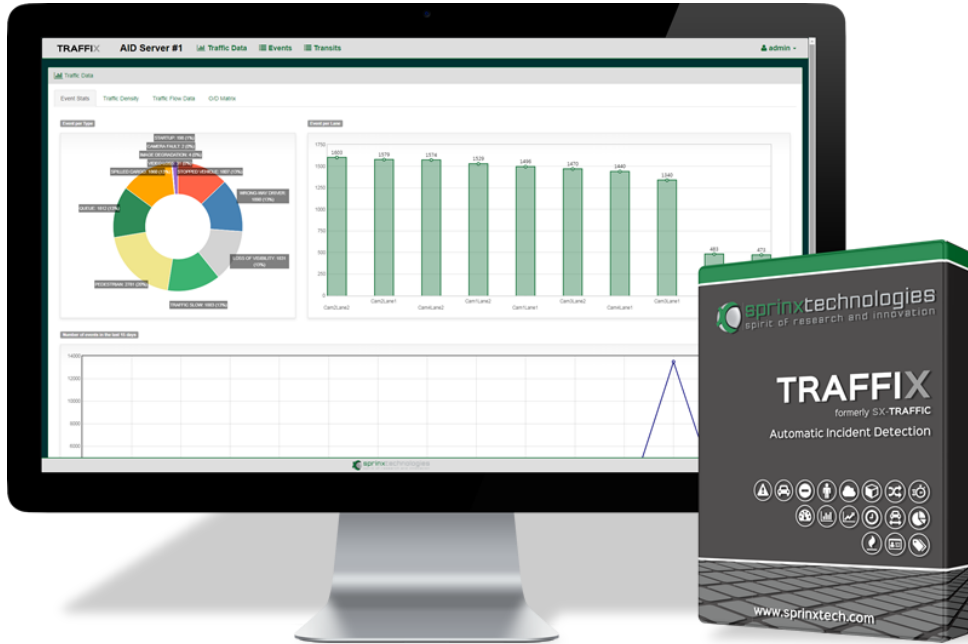
**TRAFFIX** is more than a standard AID software.

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 TRAFFIX 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

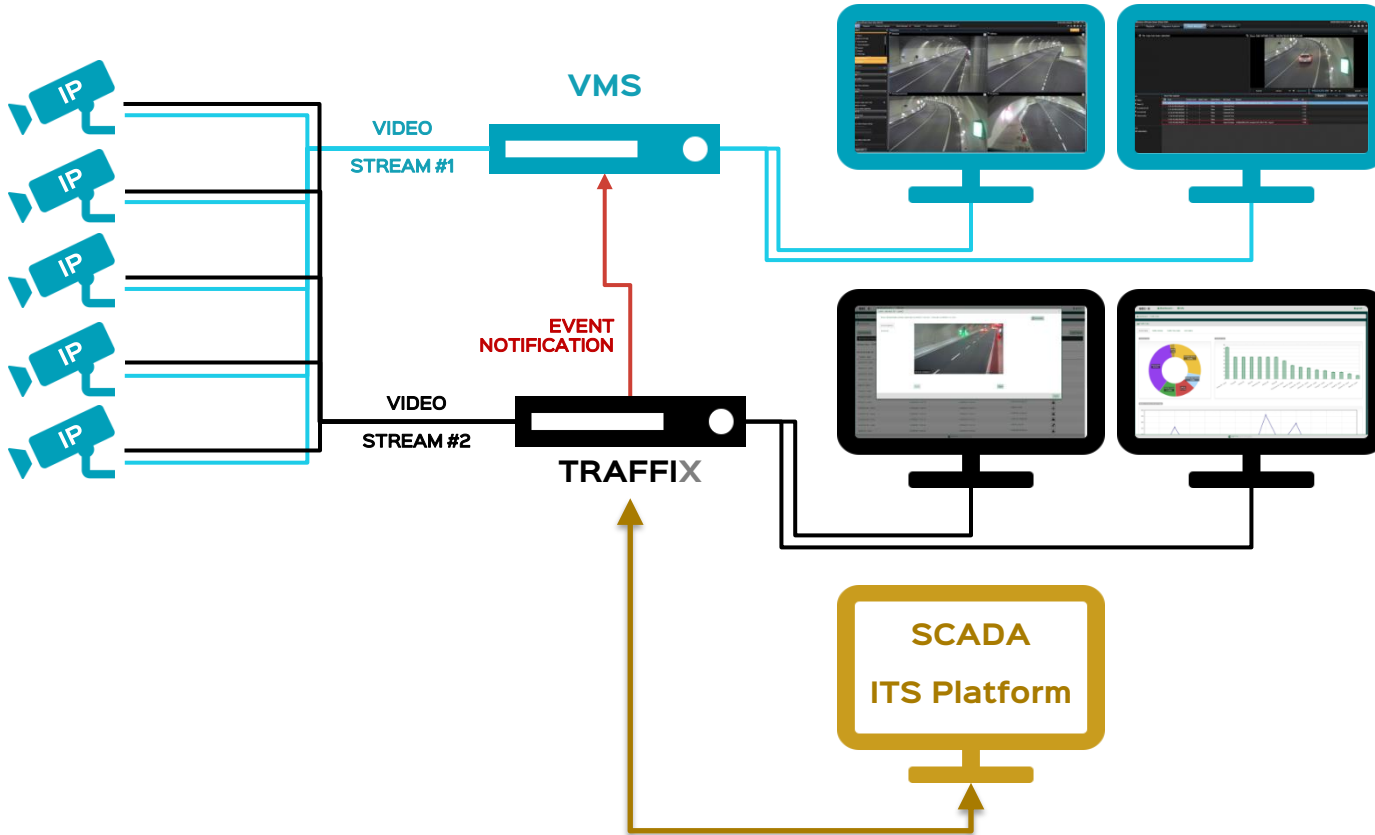
Server-based solution for Automatic Incident Detection



- ❑ 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 3<sup>rd</sup> party systems via:
  - ❑ TCP messages
  - ❑ OPC-DA protocol
  - ❑ Modbus protocol
  - ❑ Dry contacts on Moxa I/O device
- ❑ Integration with VMS platforms:
  - ❑ Genetec
  - ❑ SeeTec
  - ❑ Milestone
  - ❑ IndigoVision NVR
  - ❑ Wisenet Wave
  - ❑ Mirasys
- ❑ Data collection from Sprinx Traffic AID cameras and LPR cameras
- ❑ Video clip of traffic events (option)
- ❑ Failover configuration (option)

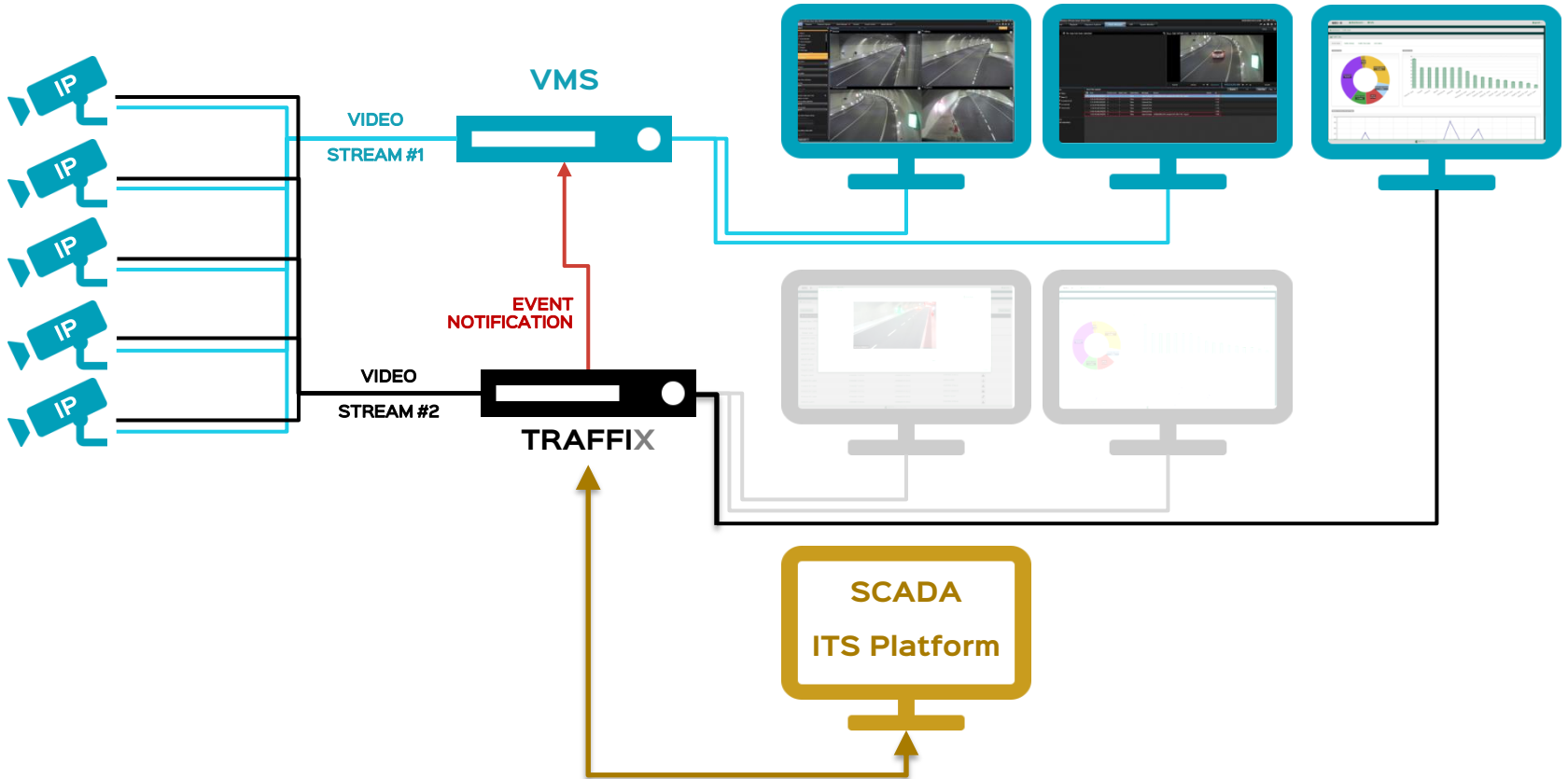
# TRAFFIX

Server-based solution for Automatic Incident Detection



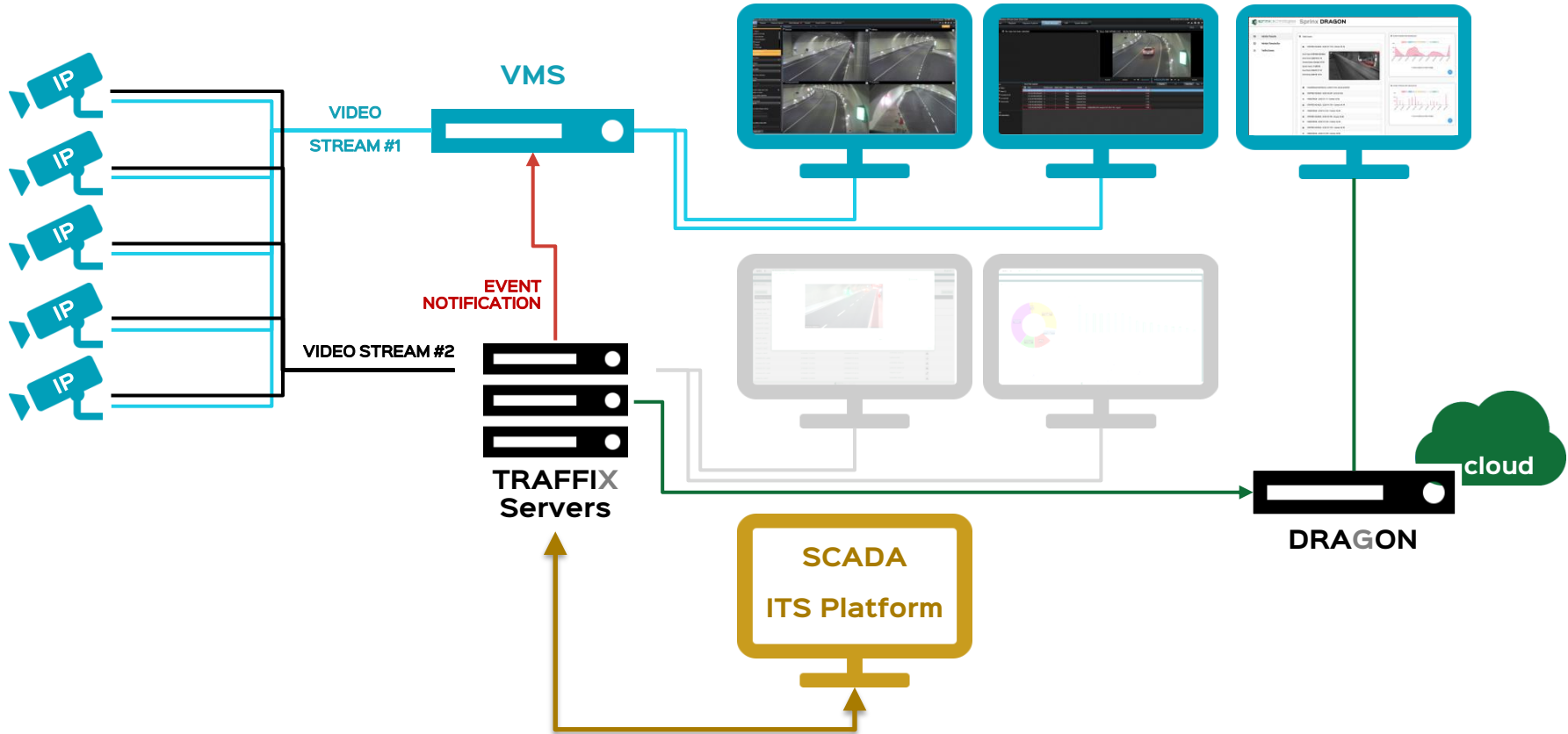
# TRAFFIX

Server-based solution for Automatic Incident Detection



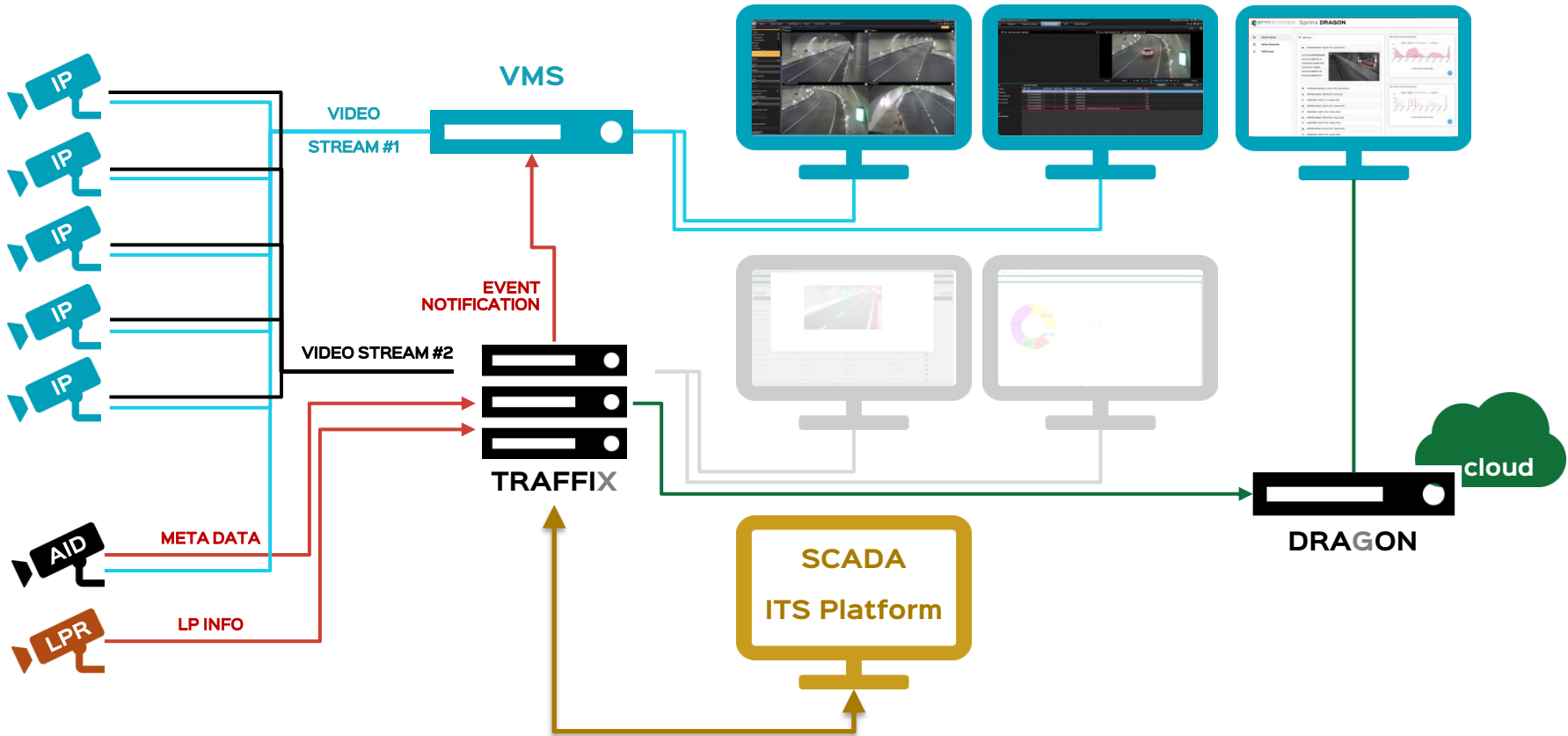
# TRAFFIX

Server-based solution for Automatic Incident Detection



# TRAFFIX

Server-based solution for Automatic Incident Detection





# TRAFFIX

Server-based solution for Automatic Incident Detection



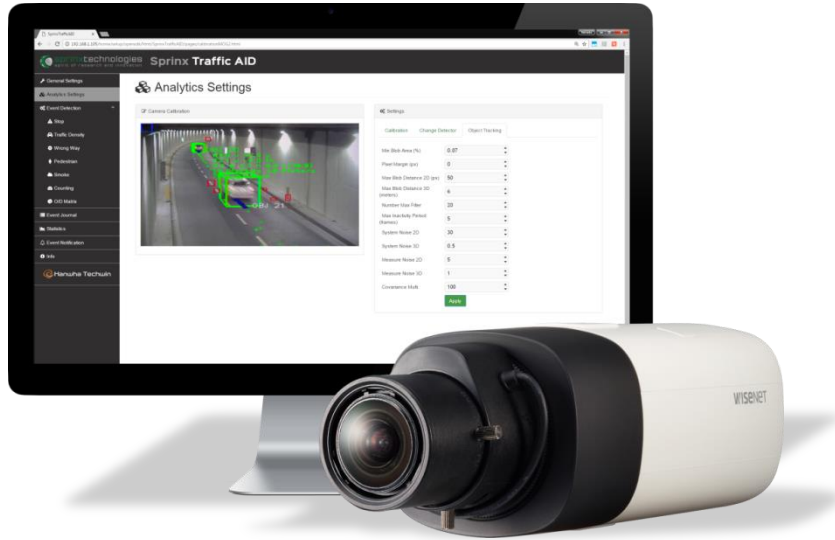
CITY	BASIC	PRO	ADVANCED	PREMIUM
	STOPPED VEHICLE	STOPPED VEHICLE	STOPPED VEHICLE	STOPPED VEHICLE
	SLOWDOWN & QUEUE	SLOWDOWN & QUEUE	SLOWDOWN & QUEUE	SLOWDOWN & QUEUE
	PEDESTRIAN	PEDESTRIAN	PEDESTRIAN	PEDESTRIAN
	SMOKE / LOSS of VISIBILITY		SMOKE / LOSS of VISIBILITY	SMOKE / LOSS of VISIBILITY
		WRONGWAY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

# TRAFFIC Applications

Edge-based applications on Hanwha Techwin cameras

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Edge-based applications on Hanwha Techwin cameras



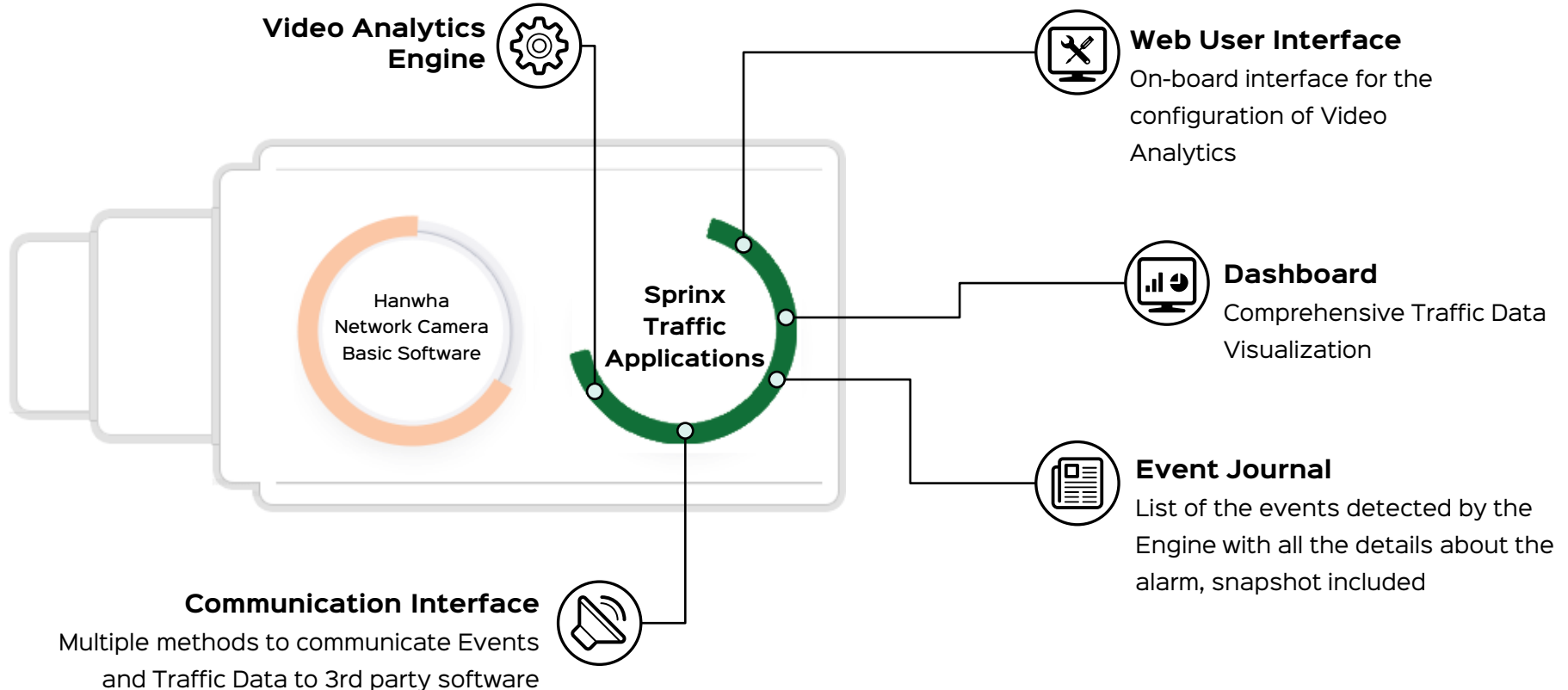
## Sprinx TRAFFIC APPs

turn a standard camera into a smart traffic sensor.

- Based on the pioneering 3D object tracking technology and innovative traffic algorithms, awarded at Intertraffic Innovation Awards 2018
- Easy to deploy
- Running on standard CCTV cameras
- Available on Hanwha Techwin cameras awarded for environmental sustainability and cyber security
- Cost-effective and non-invasive

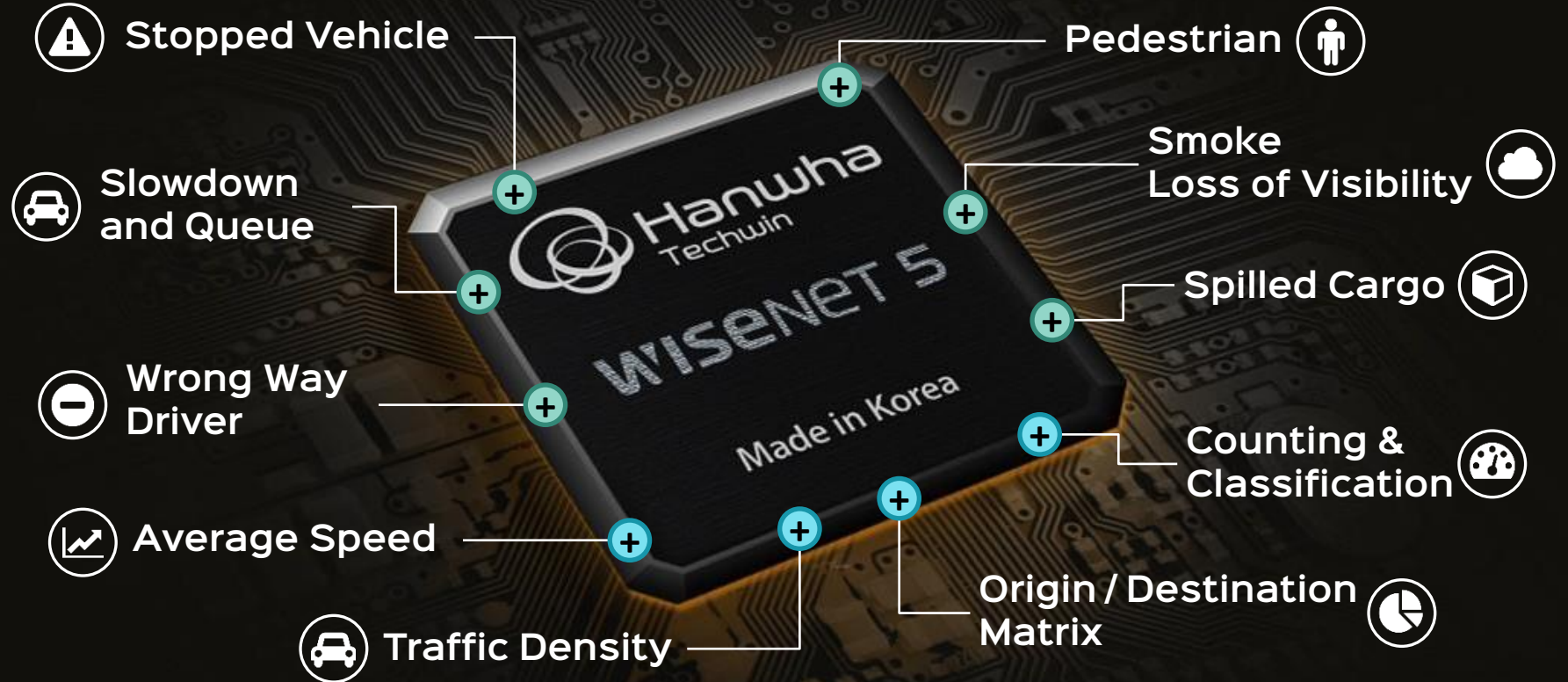
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Edge-based applications on Hanwha Techwin cameras



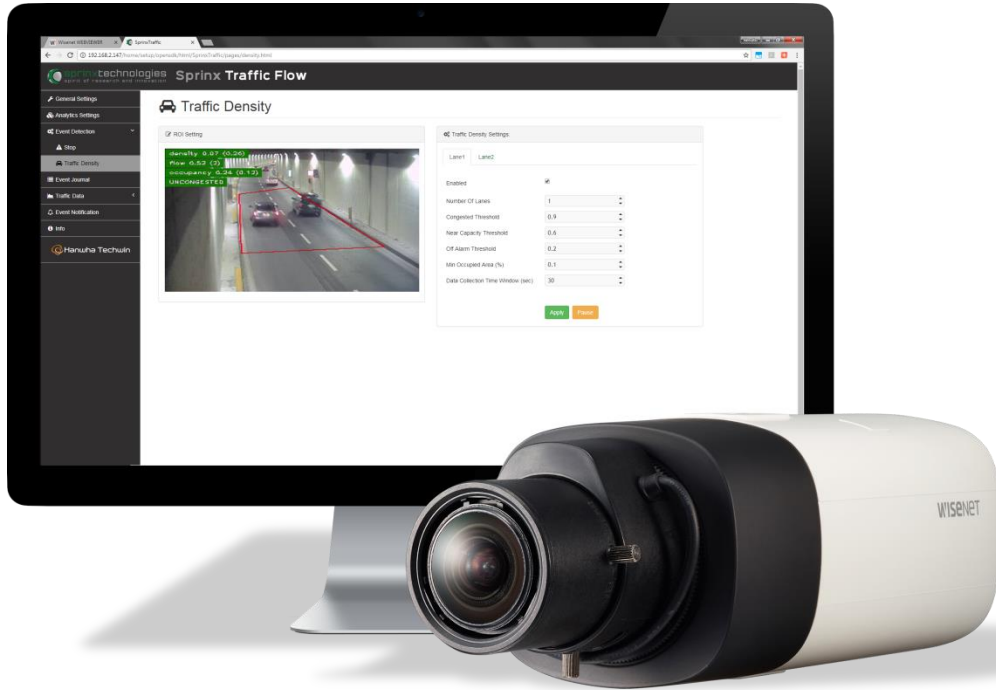
# TRAFFIC Applications

Edge-based applications on Hanwha Techwin cameras



# TRAFFIC Flow

Edge-based application for Traffic Flow analysis



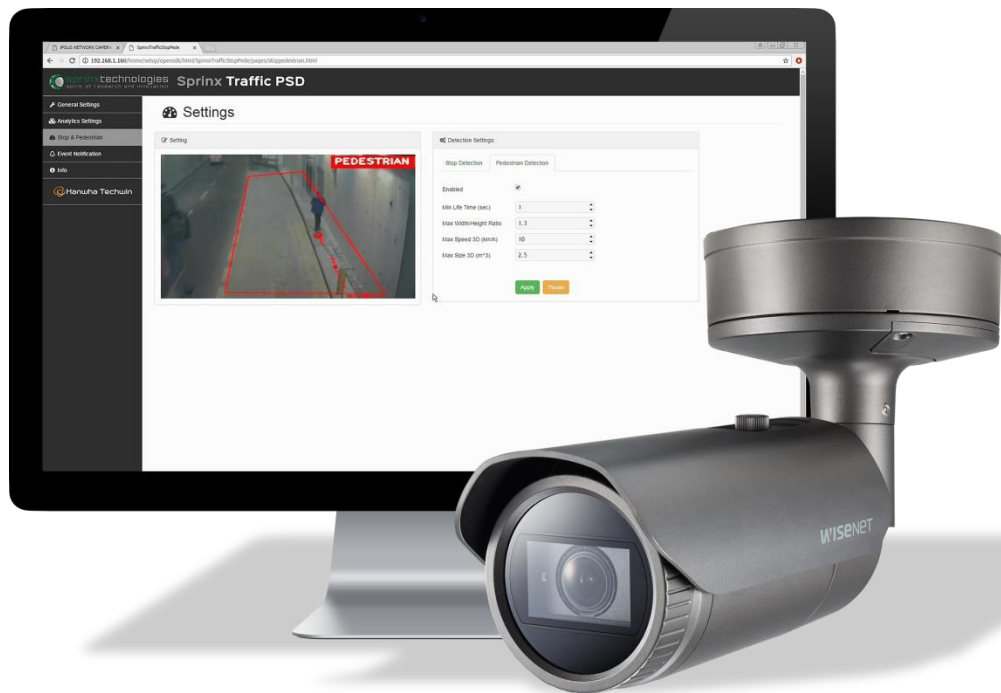
- ❑ STOPPED VEHICLE
- ❑ TRAFFIC SLOWDOWN
- ❑ TRAFFIC CONGESTION / QUEUE
- ❑ TRAFFIC DENSITY



WISENET X series

# TRAFFIC PSD

Edge-based application for Stopped Vehicle and Pedestrian



☐ STOPPED VEHICLE

☐ PEDESTRIAN



WISENET X series

# TRAFFIC Data

Edge-based application for Traffic Data Collection



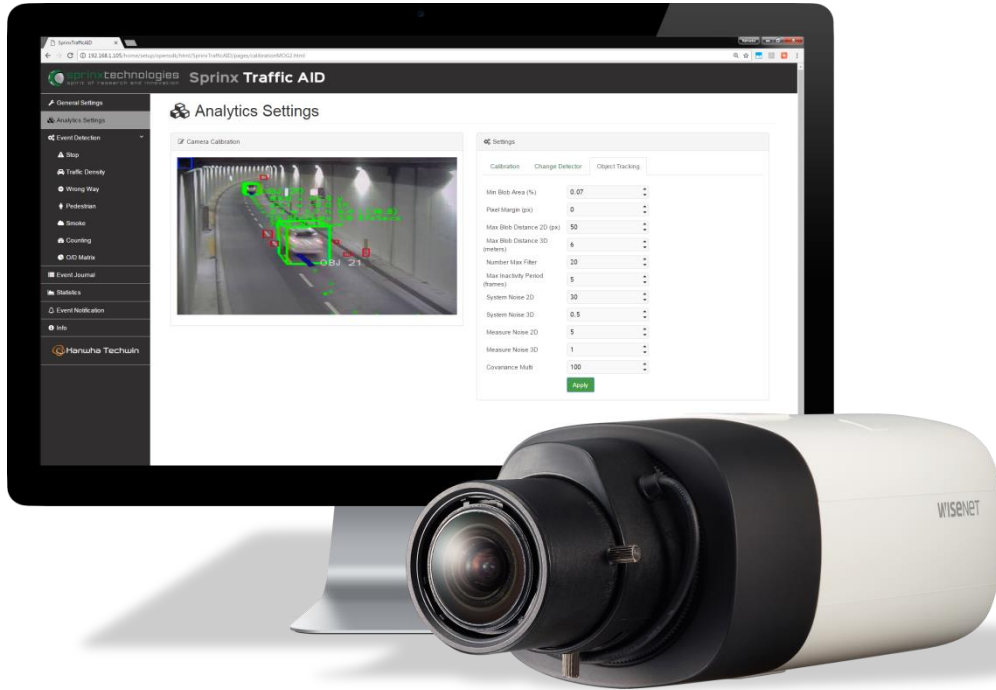
- ❑ VEHICLE COUNTING
- ❑ VEHICLE CLASSIFICATION
  - ❑ Motorbikes
  - ❑ Cars
  - ❑ Trucks & Buses
- ❑ AVERAGE SPEED
- ❑ TRAFFIC DENSITY
- ❑ ORIGIN / DESTINATION MATRIX





# TRAFFIC AID

Edge-based application with full AID features



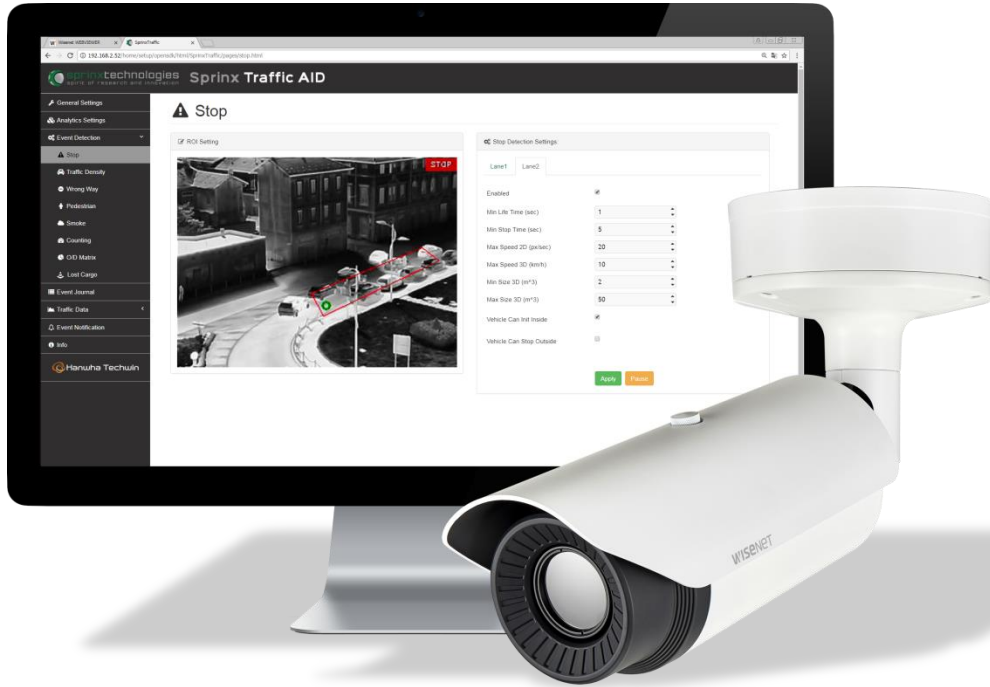
- ❑ STOPPED VEHICLE
- ❑ SLOWDOWN & CONGESTION (QUEUE)
- ❑ WRONG WAY DRIVER
- ❑ PEDESTRIAN
- ❑ SMOKE / LOSS OF VISIBILITY
- ❑ SPILLED CARGO
- ❑ TRAFFIC DATA
  - ❑ VEHICLE COUNTING & CLASSIFICATION
  - ❑ AVERAGE SPEED
  - ❑ TRAFFIC DENSITY
  - ❑ ORIGIN / DESTINATION MATRIX



**WISENET** X series

# TRAFFIC APP

Edge-based application on Wisenet T thermal cameras



- ❑ STOPPED VEHICLE
- ❑ SLOWDOWN & CONGESTION (QUEUE)
- ❑ WRONG WAY DRIVER
- ❑ PEDESTRIAN
- ❑ TRAFFIC DATA
  - ❑ VEHICLE COUNTING
  - ❑ AVERAGE SPEED
  - ❑ TRAFFIC DENSITY
  - ❑ ORIGIN / DESTINATION MATRIX



WISENET T series

# TRAFFIC Applications

Edge-based applications on Hanwha Techwin cameras



TRAFFIC Flow	TRAFFIC Data	TRAFFIC PSD	TRAFFIC AID
STOPPED VEHICLE		STOPPED VEHICLE	STOPPED VEHICLE
SLOWDOWN & QUEUE			SLOWDOWN & QUEUE
		PEDESTRIAN	PEDESTRIAN
			SMOKE / LOSS of VISIBILITY
			WRONGWAY DRIVER
			SPILLED CARGO
TRAFFIC DENSITY (LoS)	TRAFFIC DENSITY (LoS)		TRAFFIC DENSITY (LoS)
	COUNTING & CLASSIF.		COUNTING & CLASSIF.
	AVERAGE SPEED		AVERAGE SPEED
	O/D MATRIX		O/D MATRIX

## Recommended Models



XNB-6000



XNB-6005



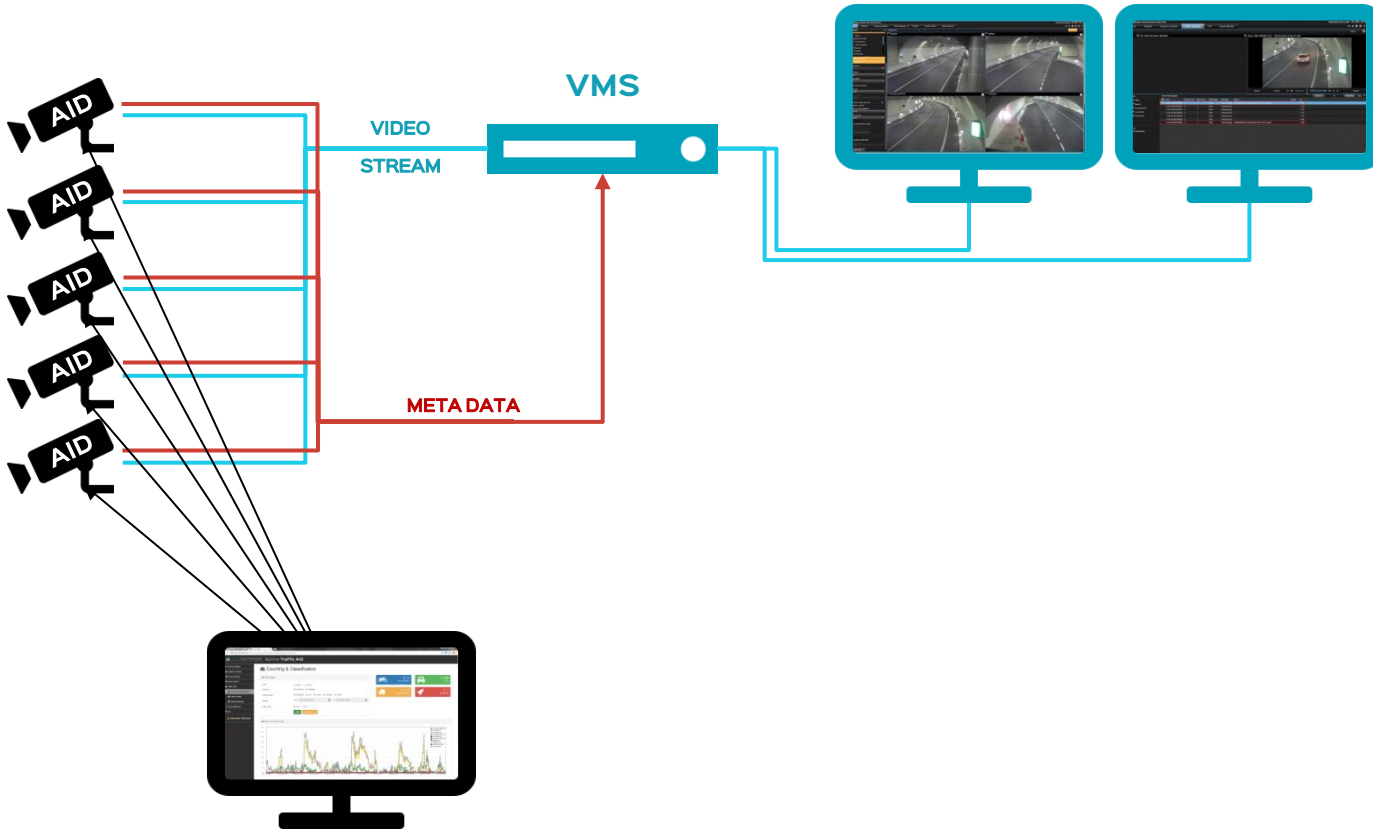
XNO-6120R



TNO-40xx (thermal)

# TRAFFIC Applications

Edge-based applications on Hanwha Techwin cameras



# GECKO Traffic Hub

Software applications for collecting and aggregating traffic data



**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.

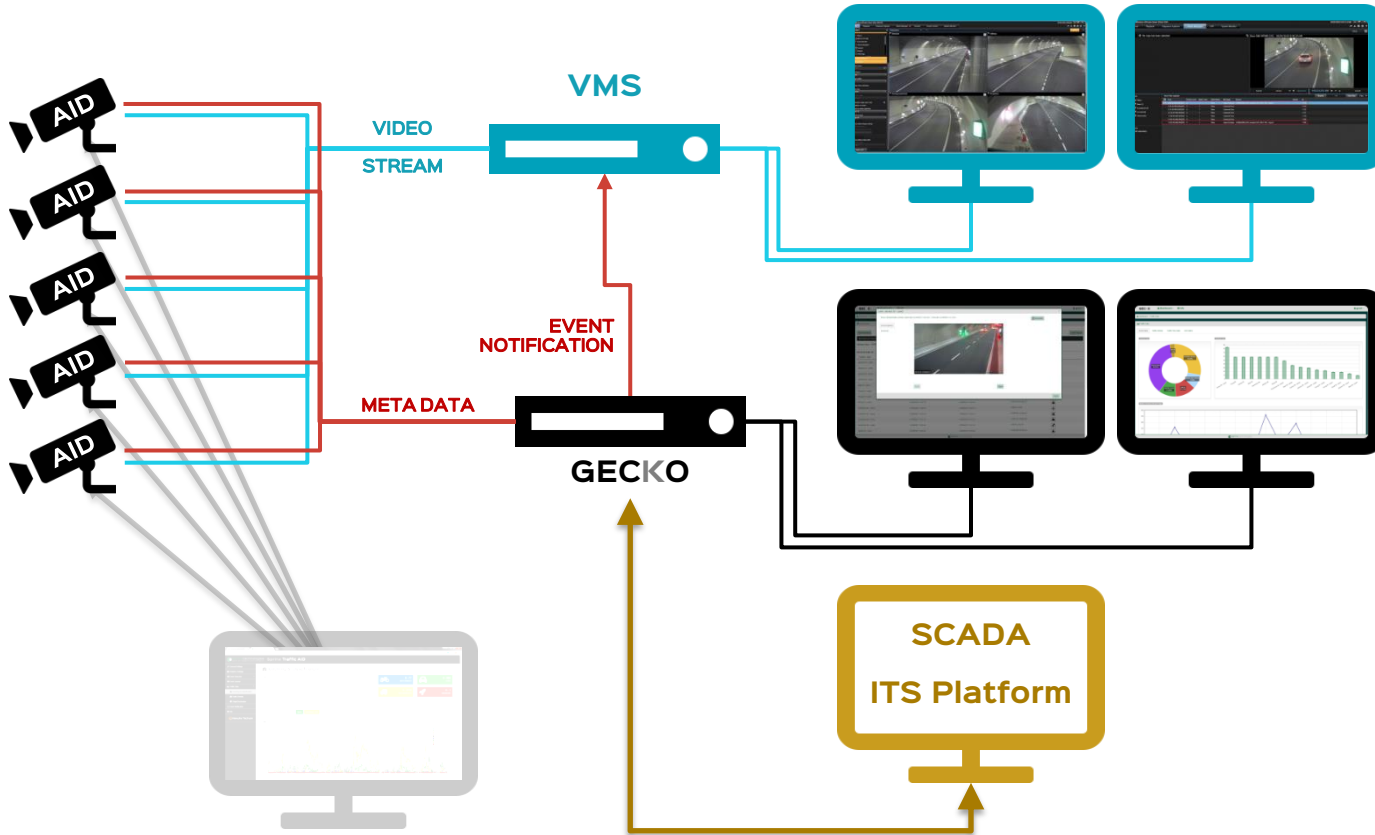
**GECKO Traffic Hub** includes a PDF exporting tool of the collected events, helpful for operators in evaluating the performances of the system.

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 feature 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.

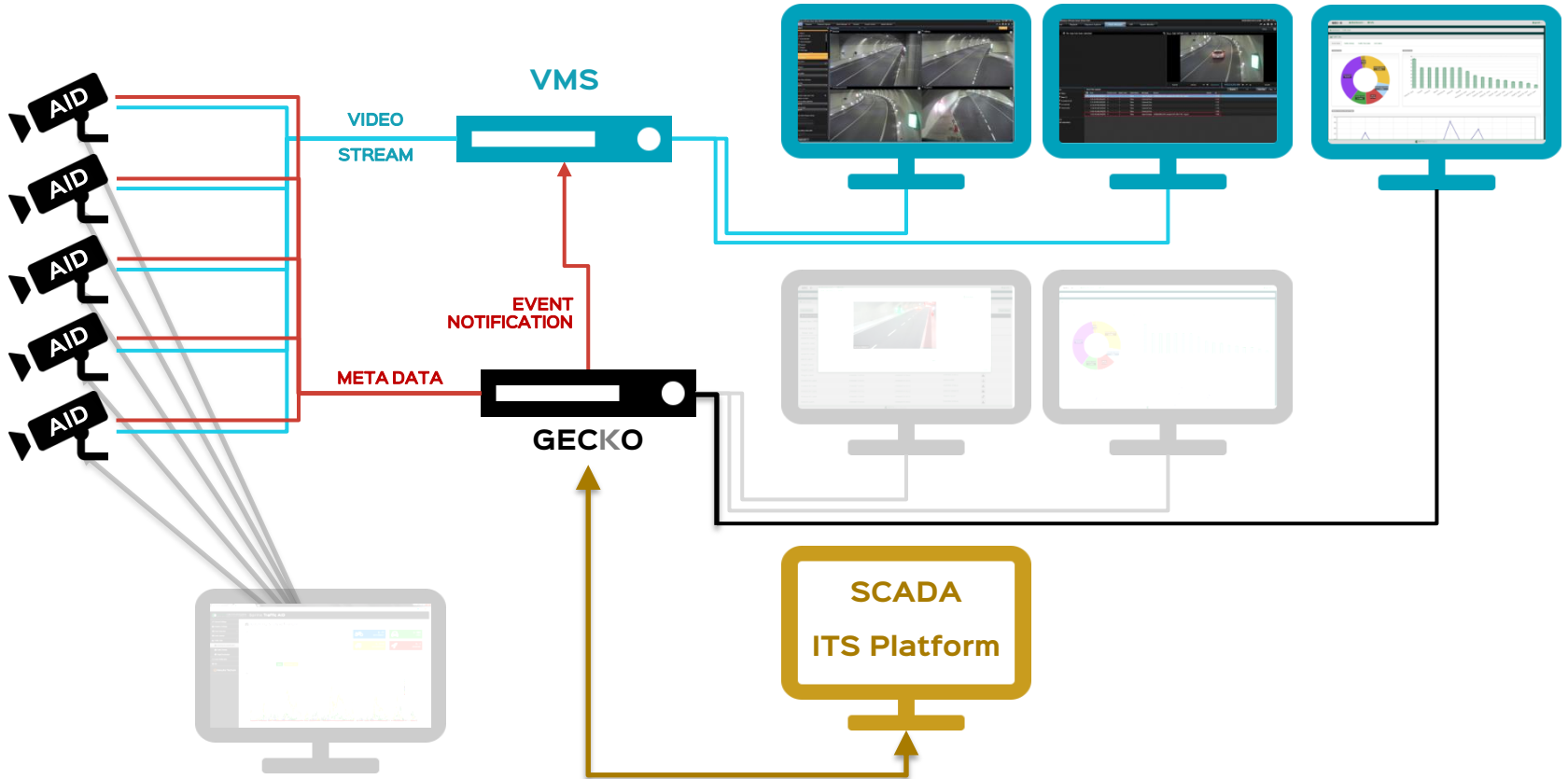
# GECKO Traffic Hub

Software applications for collecting and aggregating traffic data



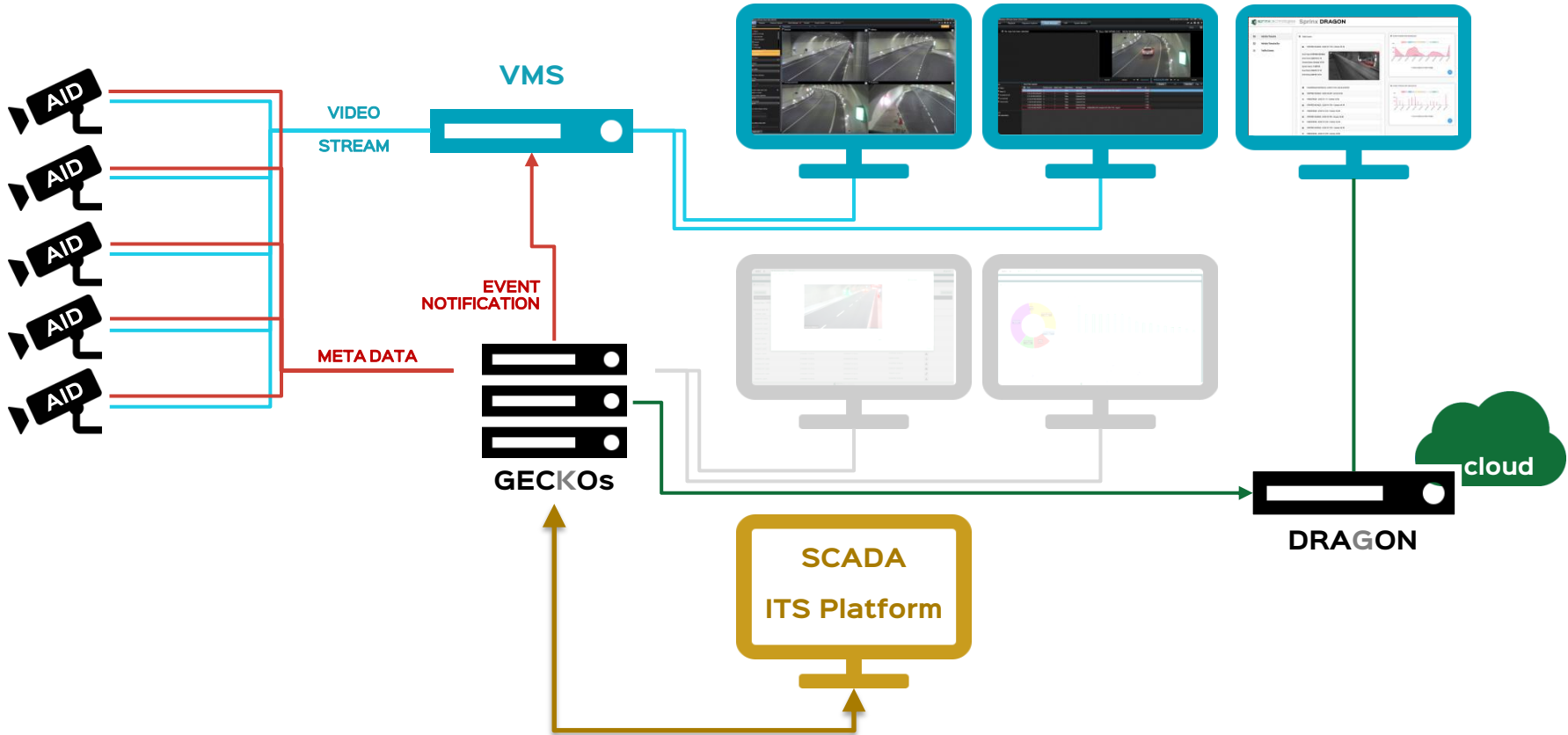
# GECKO Traffic Hub

Software applications for collecting and aggregating traffic data



# GECKO Traffic Hub & DRAGON

Software applications for collecting and aggregating traffic data





# GECKO Traffic Hub

Software application for collecting and aggregating data



	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

# Software Connectors

Integration with 3<sup>rd</sup> party systems

## VMS PLATFORMS

- Genetec
- Milestone
- Wisenet Wave
- SeeTec
- IndigoVision NVR
- Mirasys

WISENET WAVE

Genetec



MIRASYS



SeeTec  
An OnSSI Company

## ANPR MANAGEMENT PLATFORMS

- Traffic Scanner
- Lince Traffic
- LogicaPRO

TRAFFICSCANNER



LOGICA PRO



sprinx<sup>®</sup>  
technologies  
spirit of research and innovation

ver. 3.1.0 [en]