

# BEHAVIORAL RECOGNITION FOR REAL-TIME VIDEO INTELLIGENCE

INDUSTRIAL, MANUFACTURING AND HEALTHCARE  
SAFETY SOLUTIONS



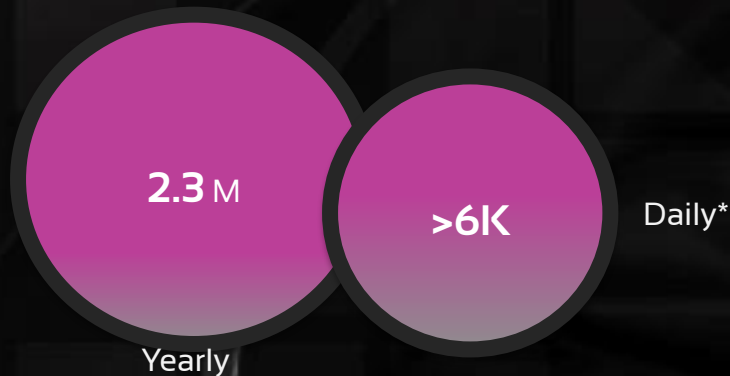
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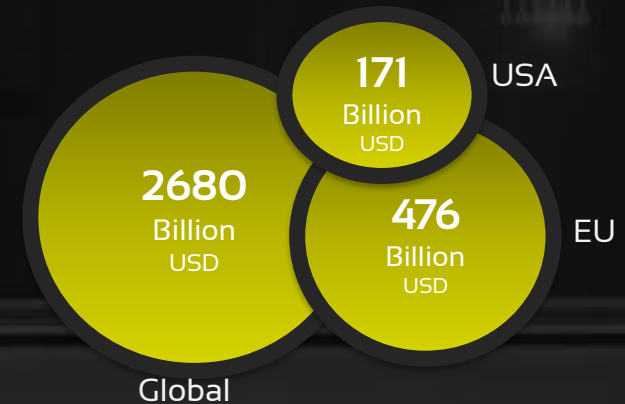
# WORKPLACE INJURIES PUT EMPLOYEE MORALE, COMPANY REPUTATION, AND PRODUCTIVITY AT HIGH RISK



## Global safety-related deaths accidents



## Yearly Cost of Injuries and damage\*



# VIOLENCE AGAINST HEALTHCARE WORKERS IS ON THE RISE!

## FACTS & FIGURES

**5 Times**  
Healthcare workplace violence is more common than in other industries

**73%**  
*Of all workplaces' assaults happen to healthcare workers*

**27%**  
Of healthcare nurses have witnessed workplace violence

**12%**  
*Of ER nurses physically assaulted each week!*

**\$1.2 Billion**  
*Total annual costs of hospital workplace violence*

# MOST COMMON WORKPLACE INJURIES\*

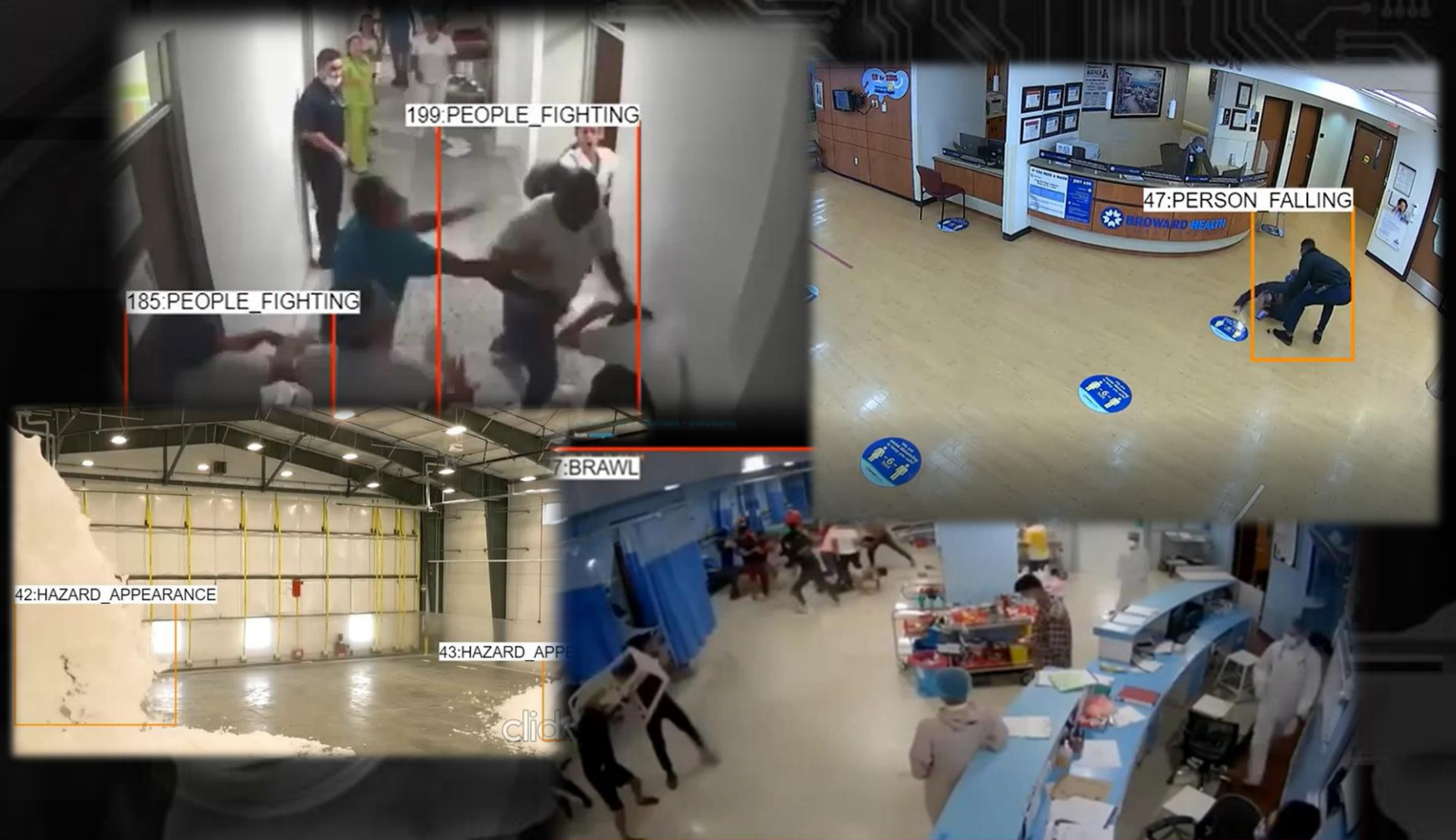
- **Slips, trips, and falls**
- **Overexertion and muscle strains**
- **Struck by workers, equipment, or falling objects**
- **Crashes or collisions**
- **Exposure to harmful substances or environments**
- **Fire and explosions**
- **Violence and other injuries by persons or animals**

ORGANIZATIONS RELY ON VIDEO SYSTEMS  
FOR SECURITY and .....SAFETY

However

# CURRENT VIDEO ANALYTICS SOLUTIONS DON'T RECOGNIZE EVENTS OF INTEREST

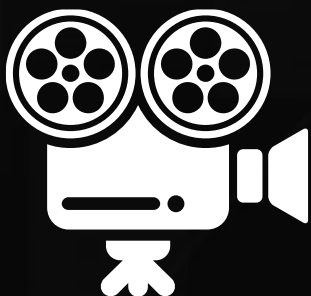
“ High demand for actionable insights from video streams, to drive video analytics market during 2017-2027 ”



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VIDEO UNDERSTANDING TECHNOLOGY  
TRANSFORMS VIDEO INTO  
ACTIONABLE INSIGHTS

# WHAT DOES IT MEAN FOR AI TO UNDERSTAND VISUAL CONTENT?







# VIOLENT ACTIVITY | **WORKPLACE VIOLENCE**

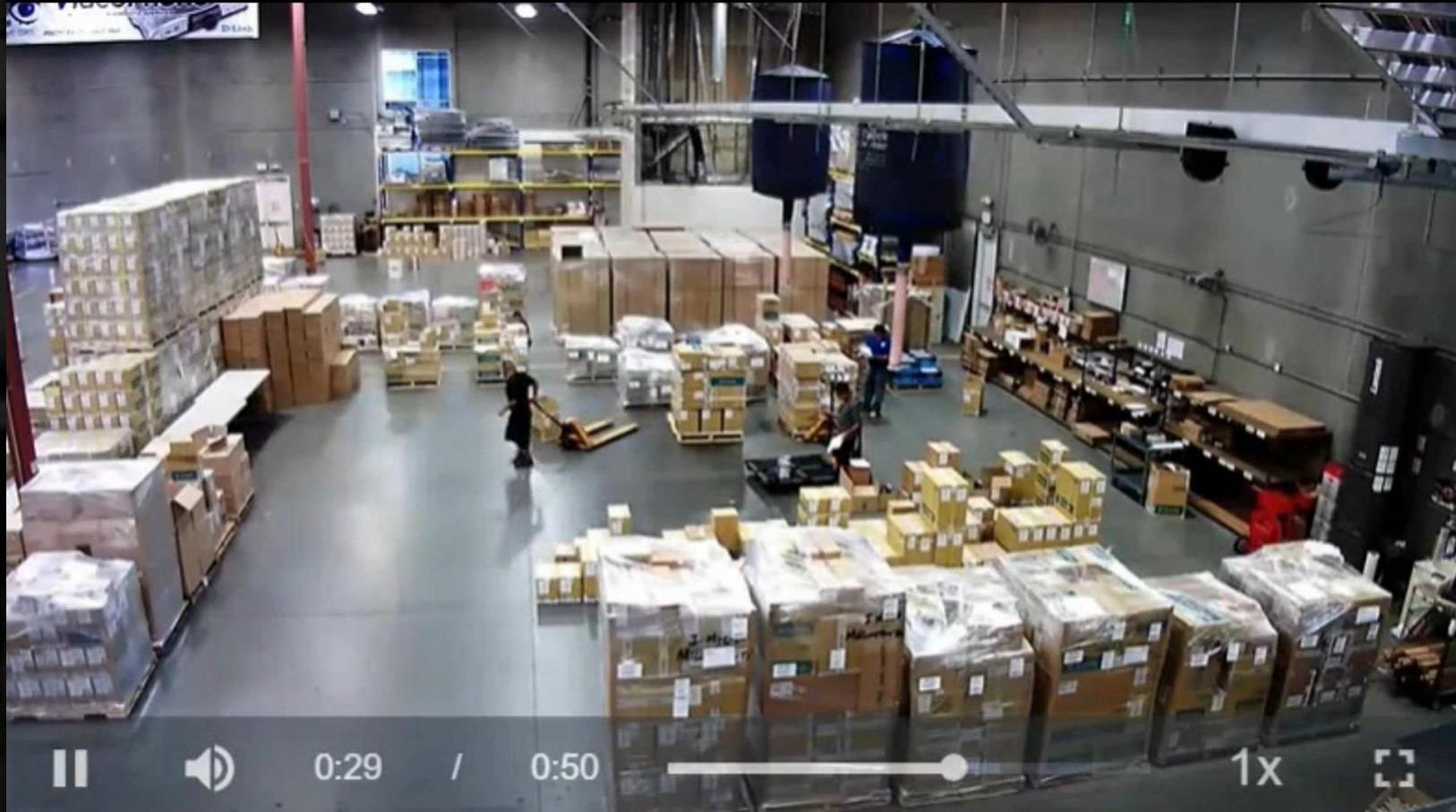


**Violence detection**

click to play a demo



# SUSPICIOUS ACTIVITY | PERSON ABANDONS AN OBJECT



click to play a demo



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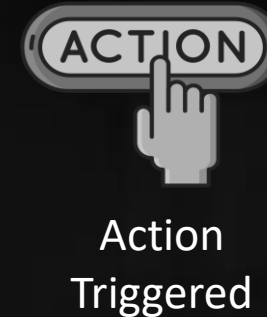
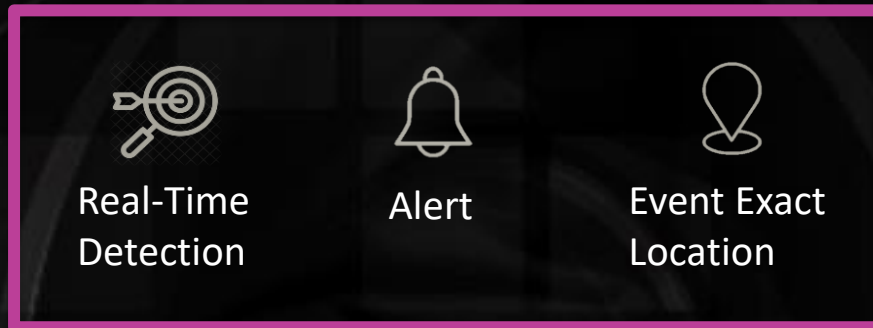
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# VIISGHTS WISE



Many Market Solutions Can Detect Objects  
viisights Detects What the Objects **Behavior** in Real-Time!

viisights WISE



Object Detection/  
Image Recognition



Behavioral Recognition/  
Video Understanding



# VALUE PROPOSITION – EVERYTHING IS BEHAVIORAL



Violent Activity



Suspicious Activity



Crowd Behavior



Perimeter Protection & Control



Traffic Monitoring



Personal & Environment Safety



Public Health (COVID-19)

# FACILITY PERIPHERAL SOLUTION\*

## Production Area

- ❖ Person with/without PPE (roadmap 2022)
- ❖ Person falling/on the ground
- ❖ Person running
- ❖ Proximity alert people/vehicle <->equipment
- ❖ Misplaced equipment (roadmap 2022)
- ❖ Behavioral workflow monitoring (roadmap 2022)

## Office Area

- ❖ Occupancy analytics
- ❖ Crowd density
- ❖ Person abandons an object (2022 roadmap)
- ❖ Violence detection
- ❖ Mask detection
- ❖ unauthorize access
- ❖ Tailgating (2022 roadmap)

## Road Network

- ❖ Person/Vehicle moving in the wrong direction
- ❖ Person close to moving vehicle (roadmap 2022)

## Restricted/Sensitive Zone

- ❖ Smoke and Fire
- ❖ Hazard detection
- ❖ Person Smoking (2022 roadmap)

## Perimeter Fence

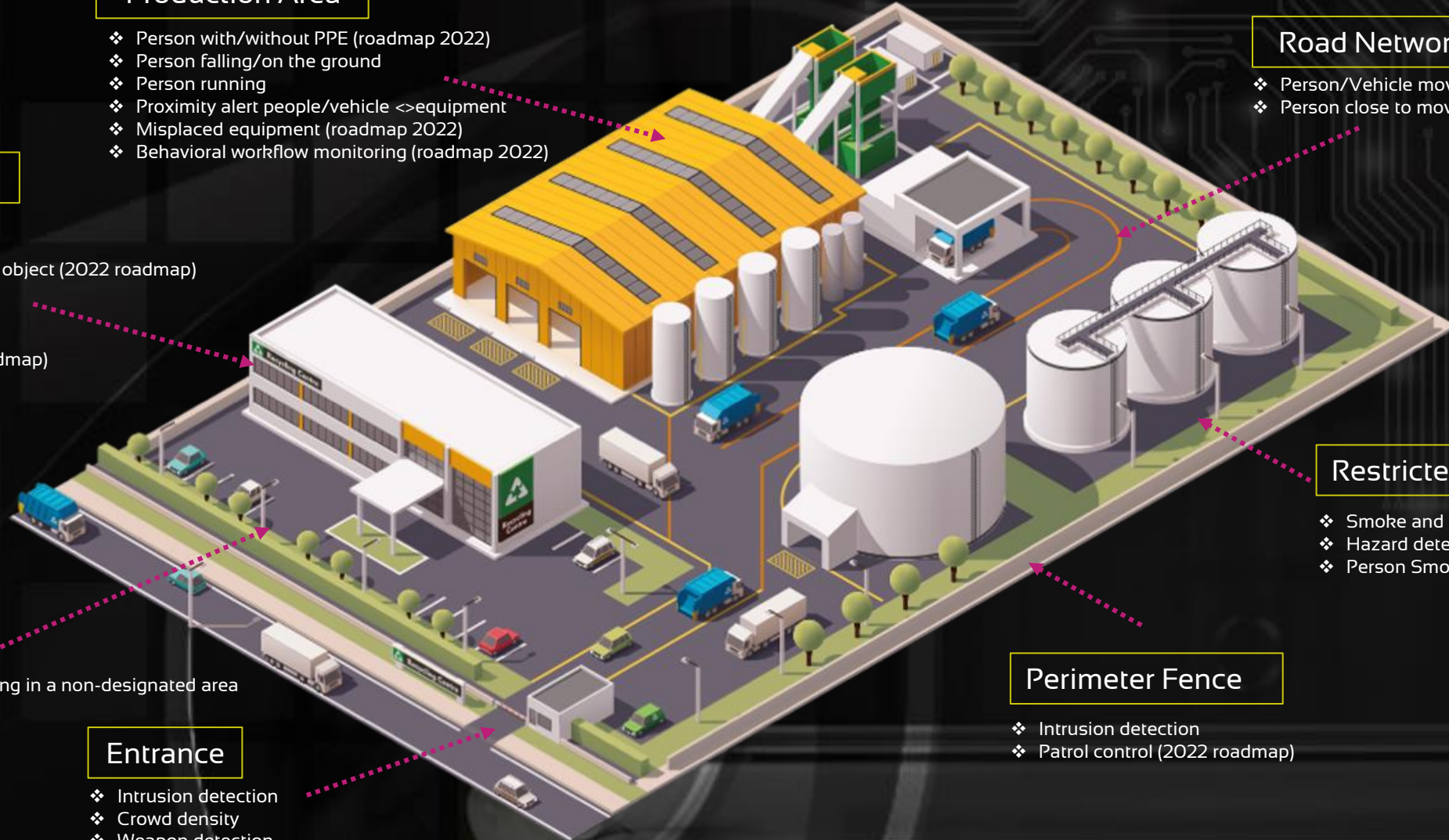
- ❖ Intrusion detection
- ❖ Patrol control (2022 roadmap)

## Entrance

- ❖ Intrusion detection
- ❖ Crowd density
- ❖ Weapon detection
- ❖ Patrol control (2022 roadmap)

## Parking

- ❖ Vehicle counting
- ❖ Vehicle stopping or parking in a non-designated area
- ❖ Crowd detection
- ❖ Loitering
- ❖ Vandalism



# HEALTHCARE PERIPHERAL SOLUTION\*

## Campus Buildings

- ❖ Occupancy analytics
- ❖ Crowd density
- ❖ Person falling
- ❖ Person to person proximity
- ❖ Person abandons an object
- ❖ Violence detection
- ❖ Weapon detection
- ❖ Smoke and fire
- ❖ Mask detection
- ❖ unauthorize access
- ❖ Tailgating (2022)

## Sensitive Area

- ❖ Hazard detection
- ❖ Smoke and fire detection
- ❖ Person running
- ❖ Object disappeared (2022)
- ❖ Person without PPE (2022)
- ❖ Tailgating (2022)
- ❖ Misplaced equipment (2022)

## Lawn/Park /Public Area

- ❖ Crowd detection
- ❖ Crowd density
- ❖ Violence/Brawl detection
- ❖ Weapon detection
- ❖ Hazard detection
- ❖ Smoke and fire detection
- ❖ Loitering
- ❖ Vandalism

## Parking Area

- ❖ Vehicle counting
- ❖ Vehicle classification
- ❖ Vehicle is moving in wrong direction
- ❖ Violence detection
- ❖ Vehicle in a no parking zone
- ❖ Smoke and fire
- ❖ Hazard detection
- ❖ Patrol control
- ❖ Contextual Loitering

## Perimeter Fence

- ❖ Intrusion detection
- ❖ Loitering
- ❖ Hazard detection
- ❖ Patrol control (roadmap)

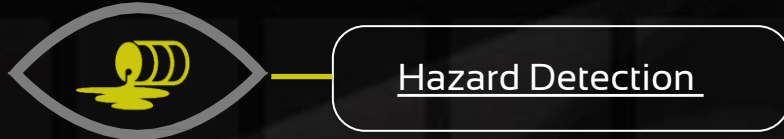
## Entry Gate

- ❖ Intrusion detection
- ❖ Crowd density
- ❖ Loitering
- ❖ Suspicious activity – multi use-case
- ❖ Violence/Brawl detection
- ❖ Weapon detection
- ❖ Patrol control (roadmap)

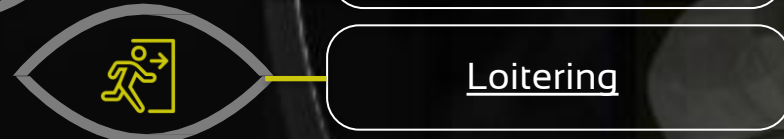
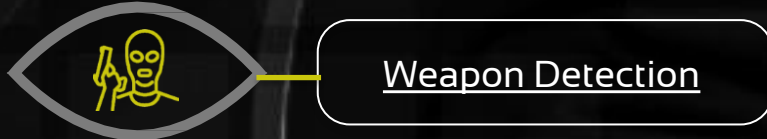


# DETECTION USE-CASES

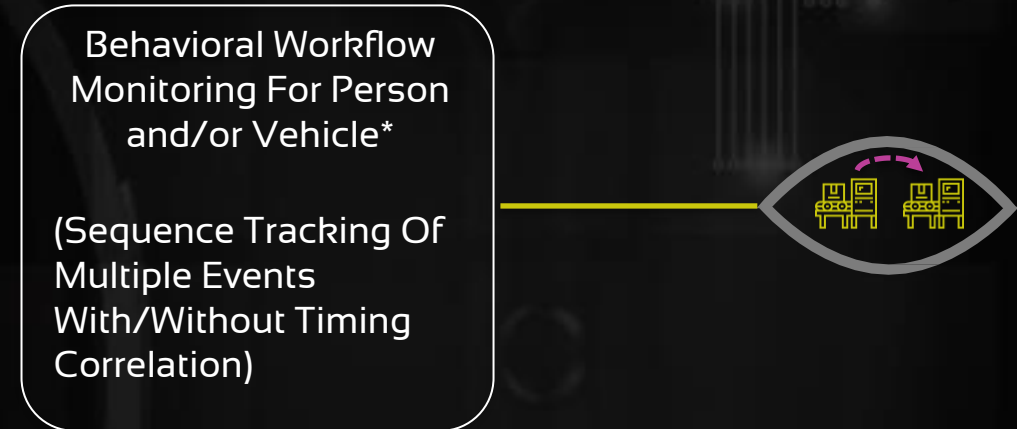
## ENVIRONMENTAL & LIFE SAFETY



## SECURITY THREATS



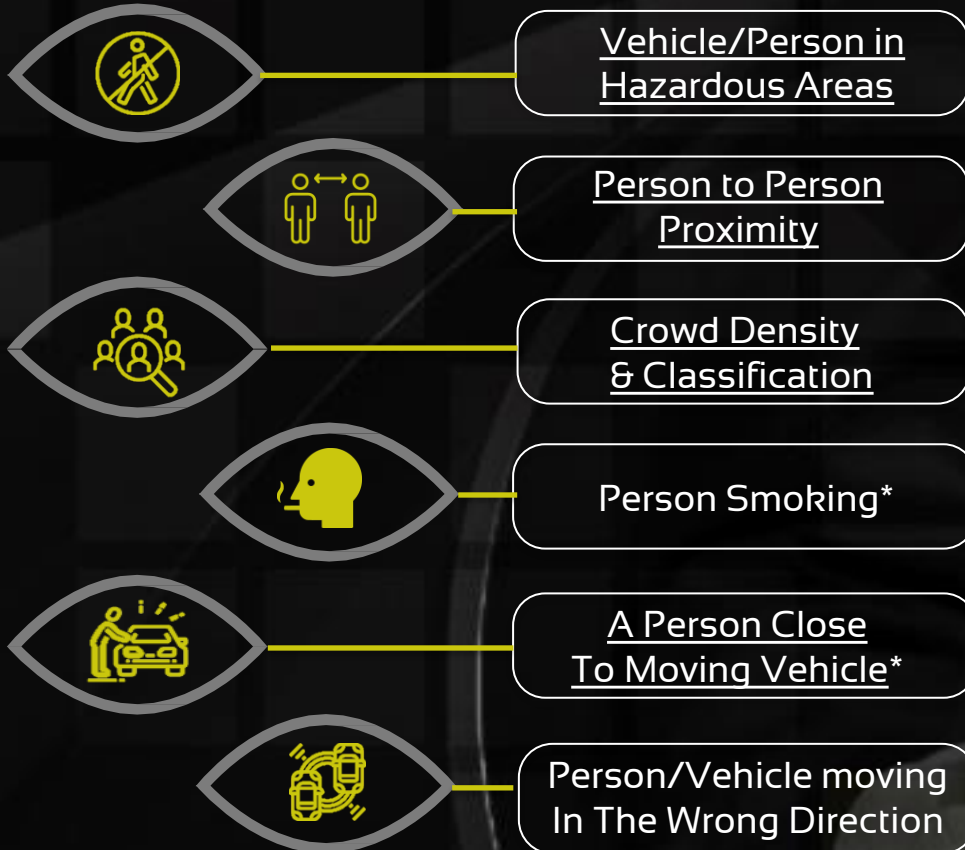
## PROCESS AND PRODUCTION MONITORING



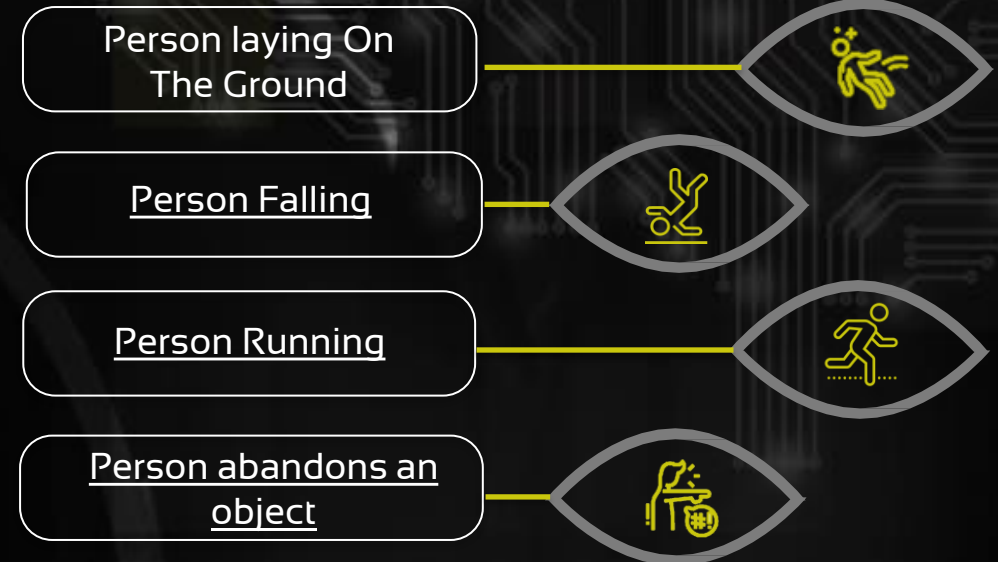
# DETECTION USE-CASES CONT.

## WORKER AND OPERATIONS SAFETY AND COMPLIANCE

### ➤ Safety



### ➤ Unusual Personal Behavior



### ➤ Worker Compliance





# WORKER AND OPERATIONS SAFETY AND COMPLIANCE



## SAFETY USE-CASES



# PERSONAL & ENVIRONMENT SAFETY | PERSON IN HAZARDOUS AREA



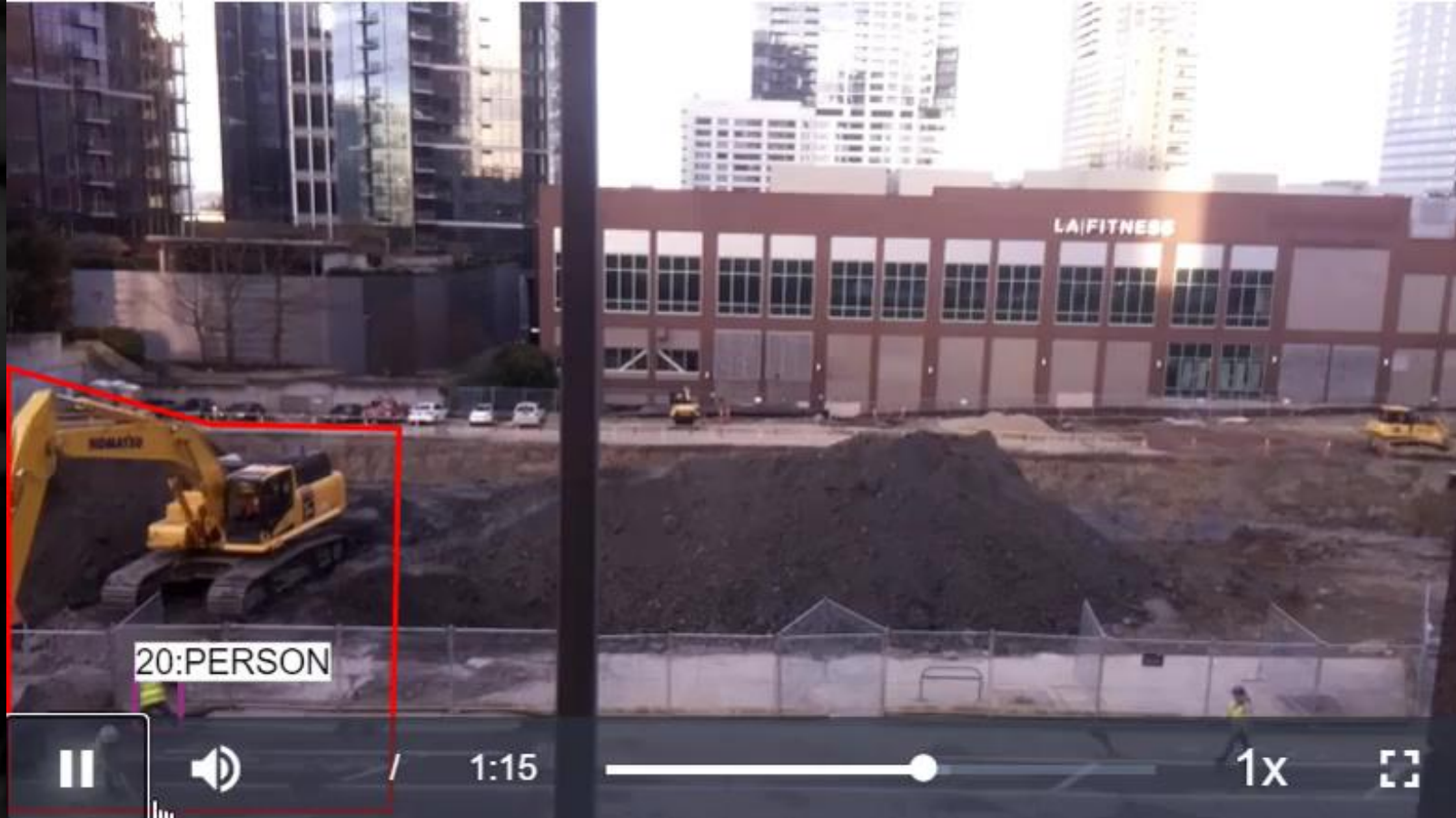
click to play a demo





BACK

# PERSONAL & ENVIRONMENT SAFETY | WORKER UNDER THE CRANE



click to play a demo



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00 : 00 : 00 : 05

ISO 100 1/250 F 5.6

3..2..1..1..2..3



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# PUBLIC-HEALTH | WORKERS PROXIMITY



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# CROWD BEHAVIOR | GATHERING CLASSIFICATION



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# CROWD BEHAVIOR | GROUP CLASSIFICATION



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# WORKER AND OPERATIONS SAFETY AND COMPLIANCE



## UNUSUAL PERSONAL BEHAVIOR USE-CASES



← BACK

# SUSPICIOUS BEHAVIOUR | PERSON FALLING

click to play a video



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# SUSPICIOUS BEHAVIOUR | PERSON RUNNING



click to play a video

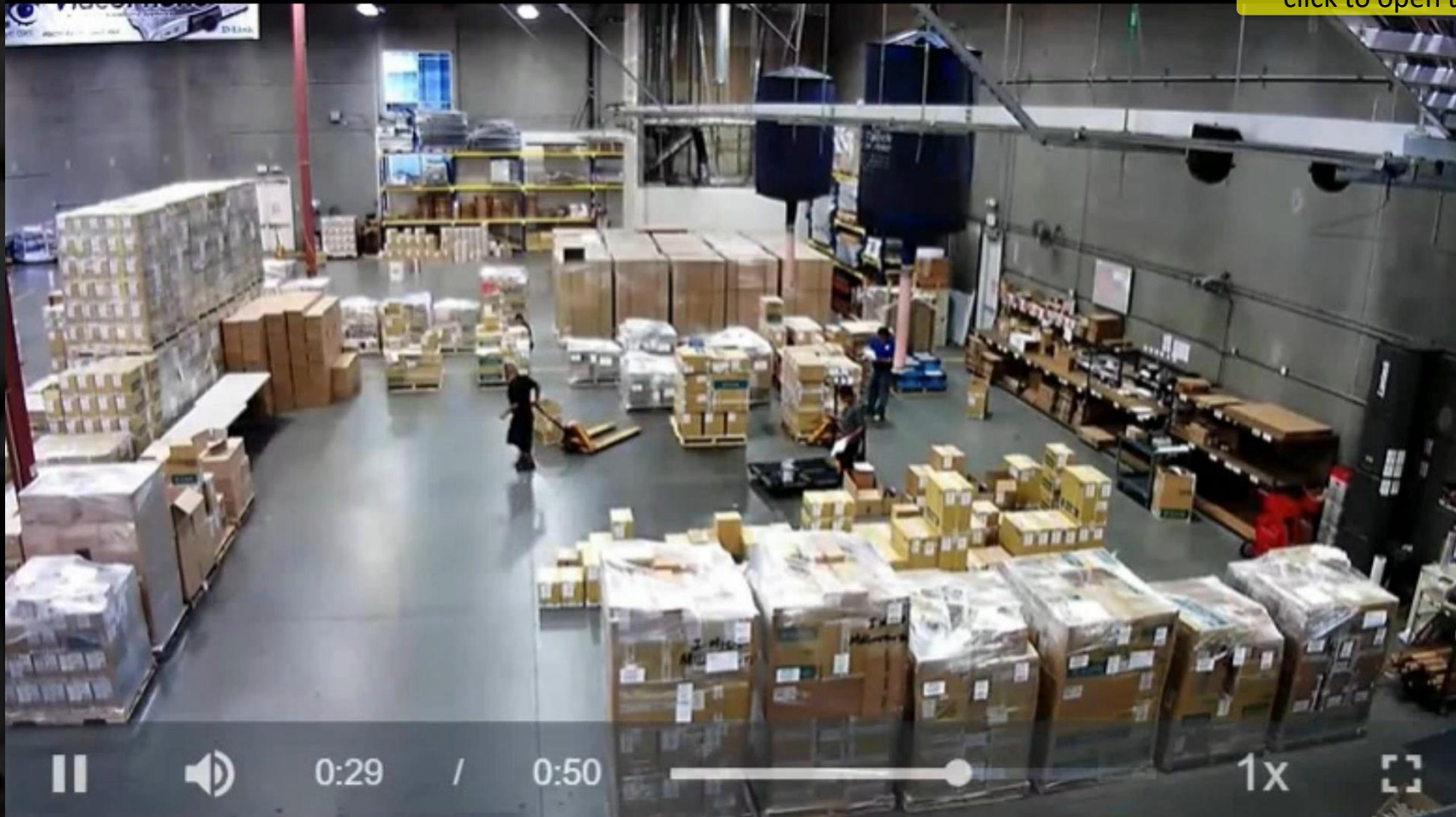
/ 0:29
1x



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# SUSPICIOUS ACTIVITY | PERSON ABANDONS AN OBJECT

click to open the video



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# WORKER AND OPERATIONS SAFETY AND COMPLIANCE



## WORKER COMPLIANCE USE-CASES



HD 4K FPS 30 REC

BACK

# PERSONAL & ENVIRONMENT SAFETY | PERSONAL PROTECTIVE EQUIPMENT



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00:00:00:05

# ENVIRONMENTAL & LIFE SAFETY



## USE-CASES



BACK

# PERSONAL & ENVIRONMENT SAFETY | HAZARD DETECTION

DARULAGEZE/REUTERS



ALARM IS A TRIGGERED WHEN THERE IS AN APPEARANCE OF OBJECTS IN THE SCENE



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00:00:00:05

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3..2..1...1..2..3



BACK

# SAFETY ALERT | SMOKE AND FIRE & UNIFORM DETECTION

0:SMOKE  
08-12-2017 17:30:49  
2:FIRE

0:36 / 3:00 1x

click to play a demo



# SECURITY THREATS



# USE-CASES





BACK

# VIOLENT ACTIVITY | **WORKPLACE VIOLENCE**

14-06-2016 20:20:54

AC-D4101R1v2



click to open the video



1:43



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BACK

# PERIMETER PROTECTION | WEAPON & ACTIVE-SHOOTER DETECTION

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HD 4K FPS 30 REC

BACK

# SUSPICIOUS ACTIVITY | VANDALISM RECOGNITION



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ISO 100 1/250 F 5.6 3..2..1..1..2..3



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BACK

# RESTRICTED AREA PROTECTION | TAILGATING



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BACK

# SUSPICIOUS ACTIVITY | LOITERING

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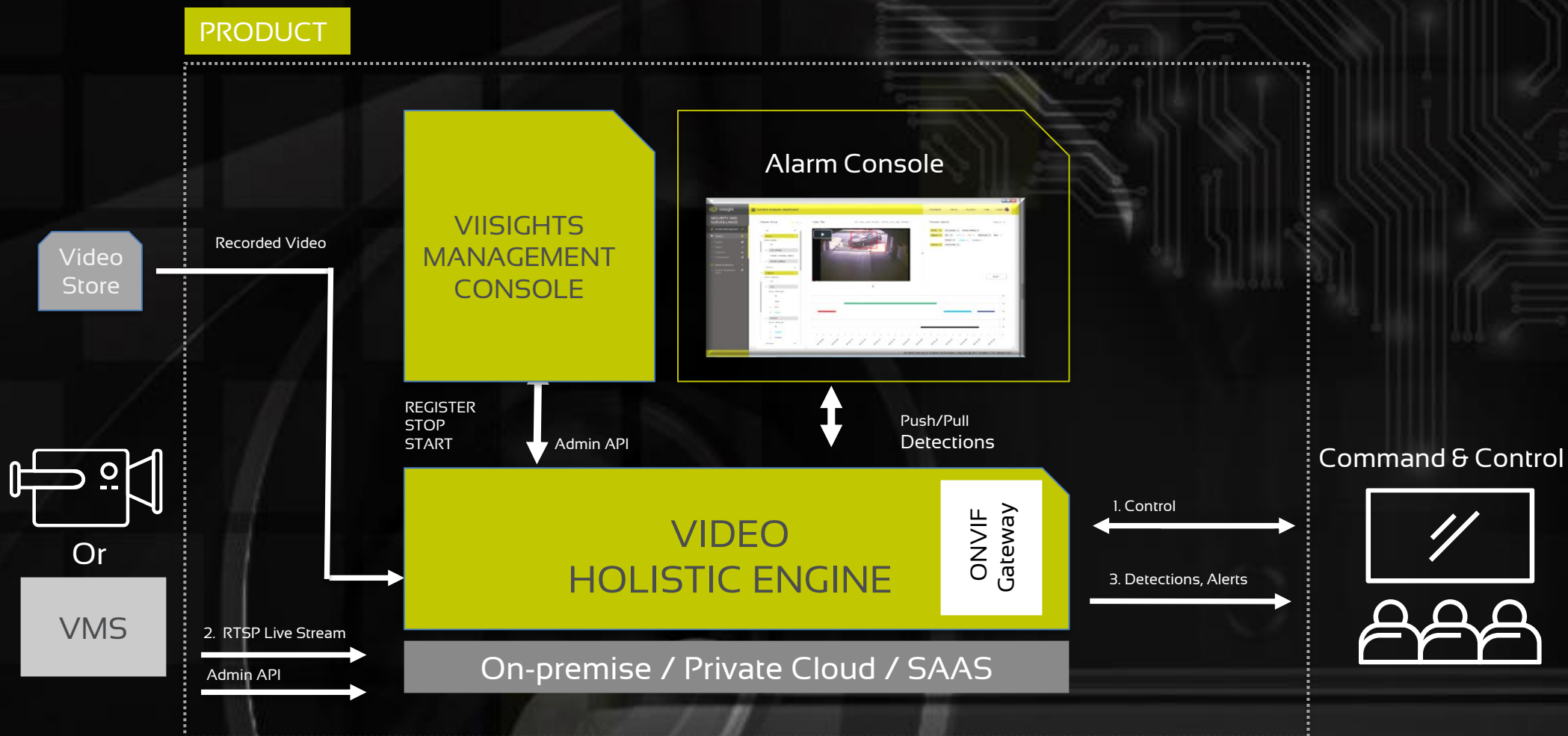
WISE



# PRODUCT ARCHITECTURE



# DEPLOYMENT ARCHITECTURE





# THANK YOU

For more information contact | [sales@viisights.com](mailto:sales@viisights.com)