

SKEYETECH

PRESENTATION

2019-09

AZUR DRONES 
Committed all the way

AZUR DRONES



**European leader in
autonomous drone**



60

Employees

30+

engineers



Operational centres
Headquarters: Mérignac (33)

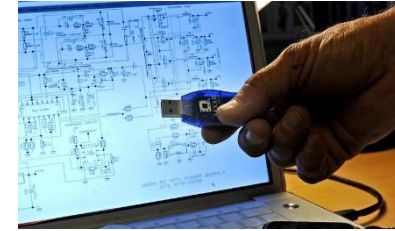


DRONES & SECURITY

INCREASING SAFETY / SECURITY ISSUES



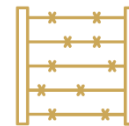
RISK ANALYSIS
DEPLOYMENT
STRATEGY



COMPLEMENTARY
TECHNOLOGIES



SITUATIONAL ASSESSMENTS



PERIMETER PATROLS



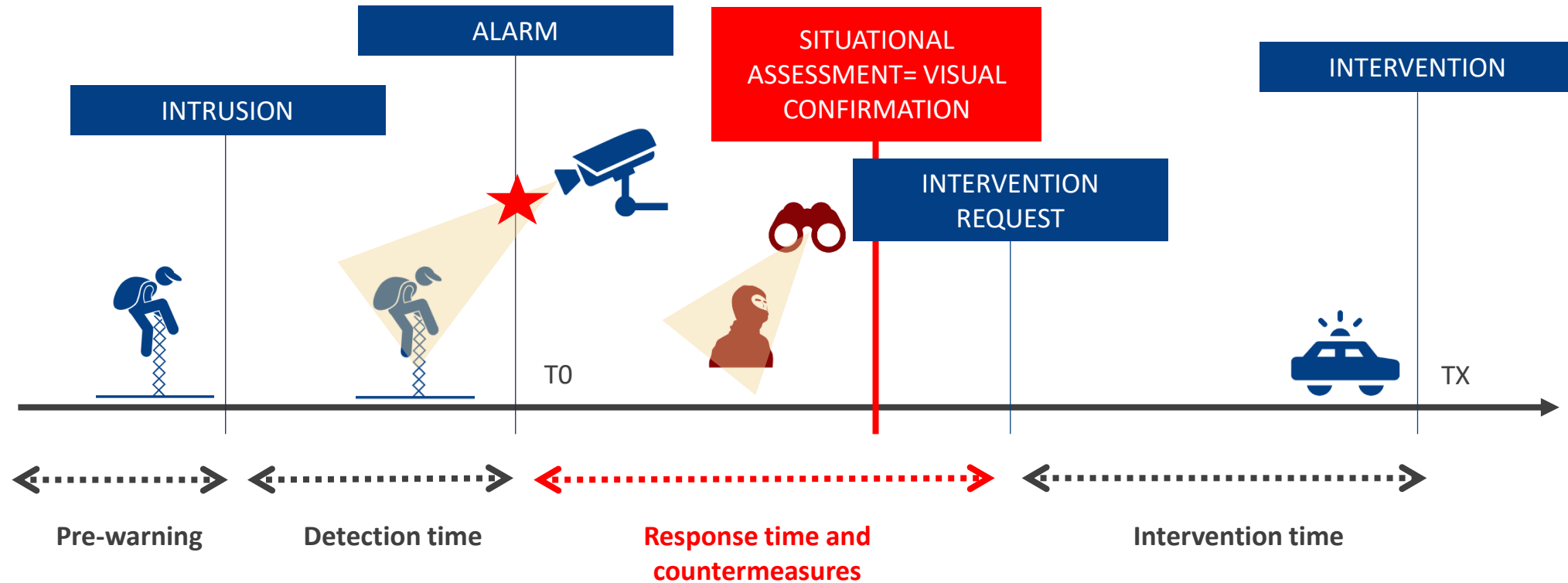
CRISIS MANAGEMENT



SITUATIONAL ASSESSMENTS



SITUATIONAL ASSESSMENT: A CRUCIAL STEP



System performance: fast and accurate intervention in case of detection

→ Need to decrease situational assessment time



SITUATIONAL ASSESSMENT SOLUTIONS: PTZ CAMERAS



Obstacles

Multiplication of
cameras



Expensive
installation

High altitude installation
(20 – 30 m)



Expensive
maintenance



Example of sensitive site parcels:

→ Numerous obstacles limiting situational assessment: buildings, trees, vehicles ...

→ Many areas uncovered by cameras



SITUATIONAL ASSESSMENT SOLUTIONS: SECURITY TEAM



At least: 2 security officers – 24/7



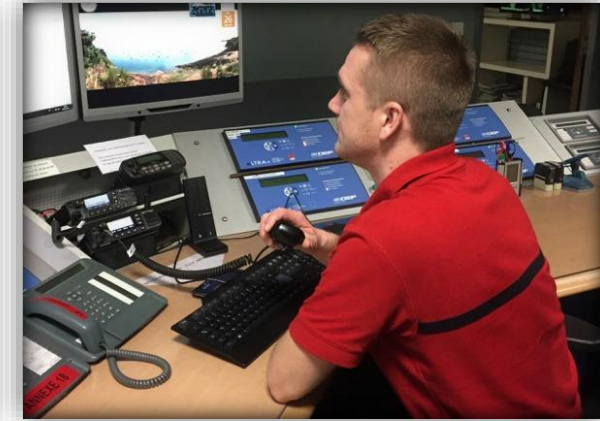
Expensive solution



Random intervention time



Risk exposure of staff

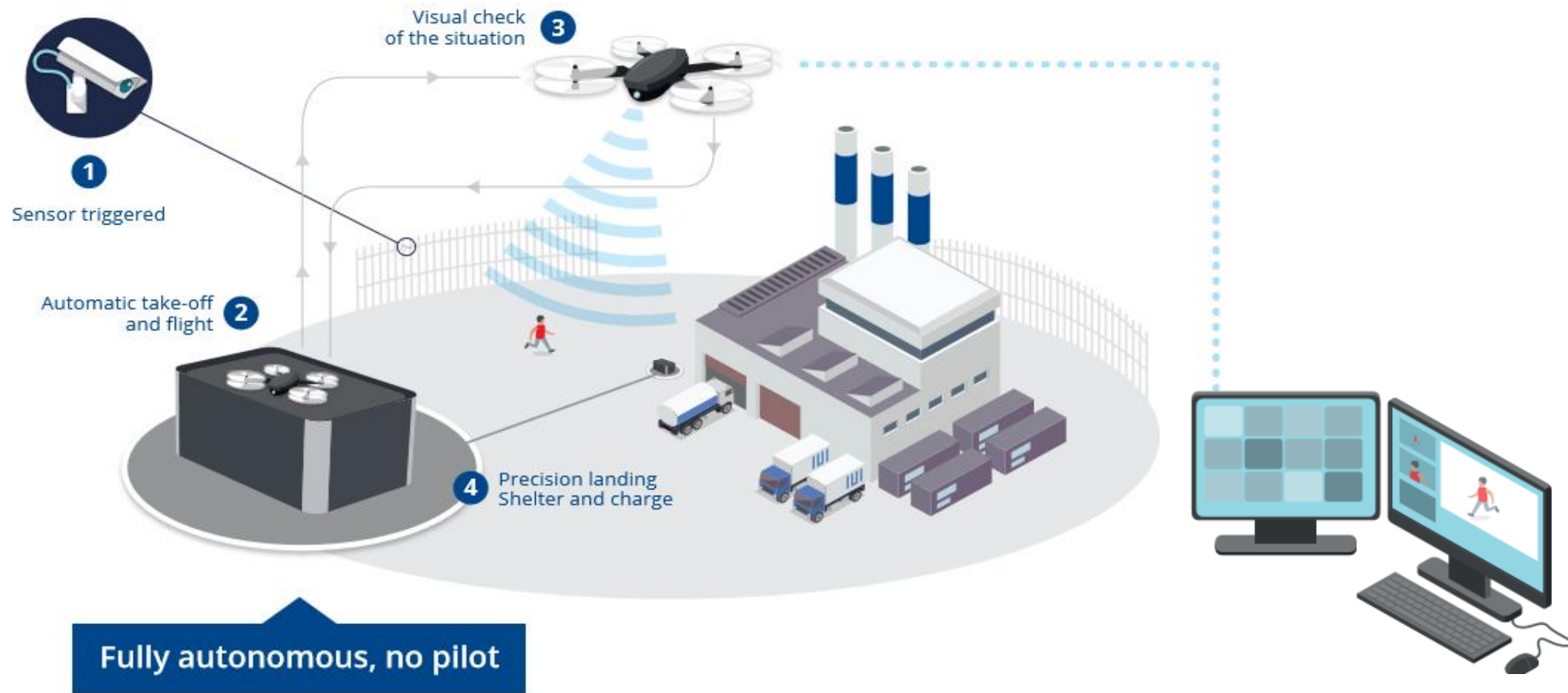


Under Staffed
Fire Staff



Inefficient assessment, or even impossible

SITUATIONAL ASSESSMENT WITH DRONE





BENEFITS OF SITUATIONAL ASSESSMENT WITH DRONE (1/2)

SPEED

On a **300 ha** site, drone is
anywhere in less than **3 min**



Take-off **< 30s**
Speed flight **14 m/s**

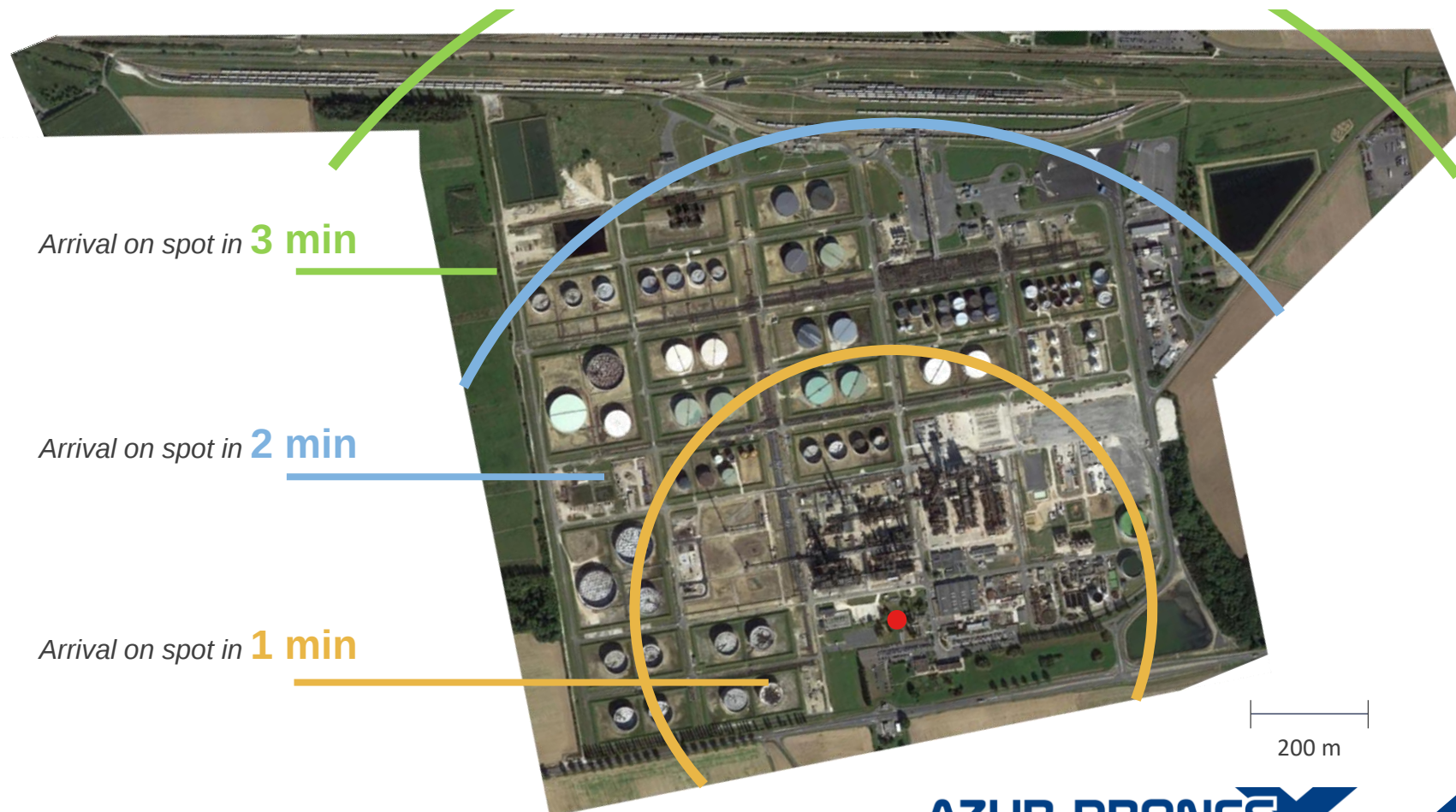


MOVING SENSOR

No blind spot



MEN SAFETY



Arrival on spot in **3 min**

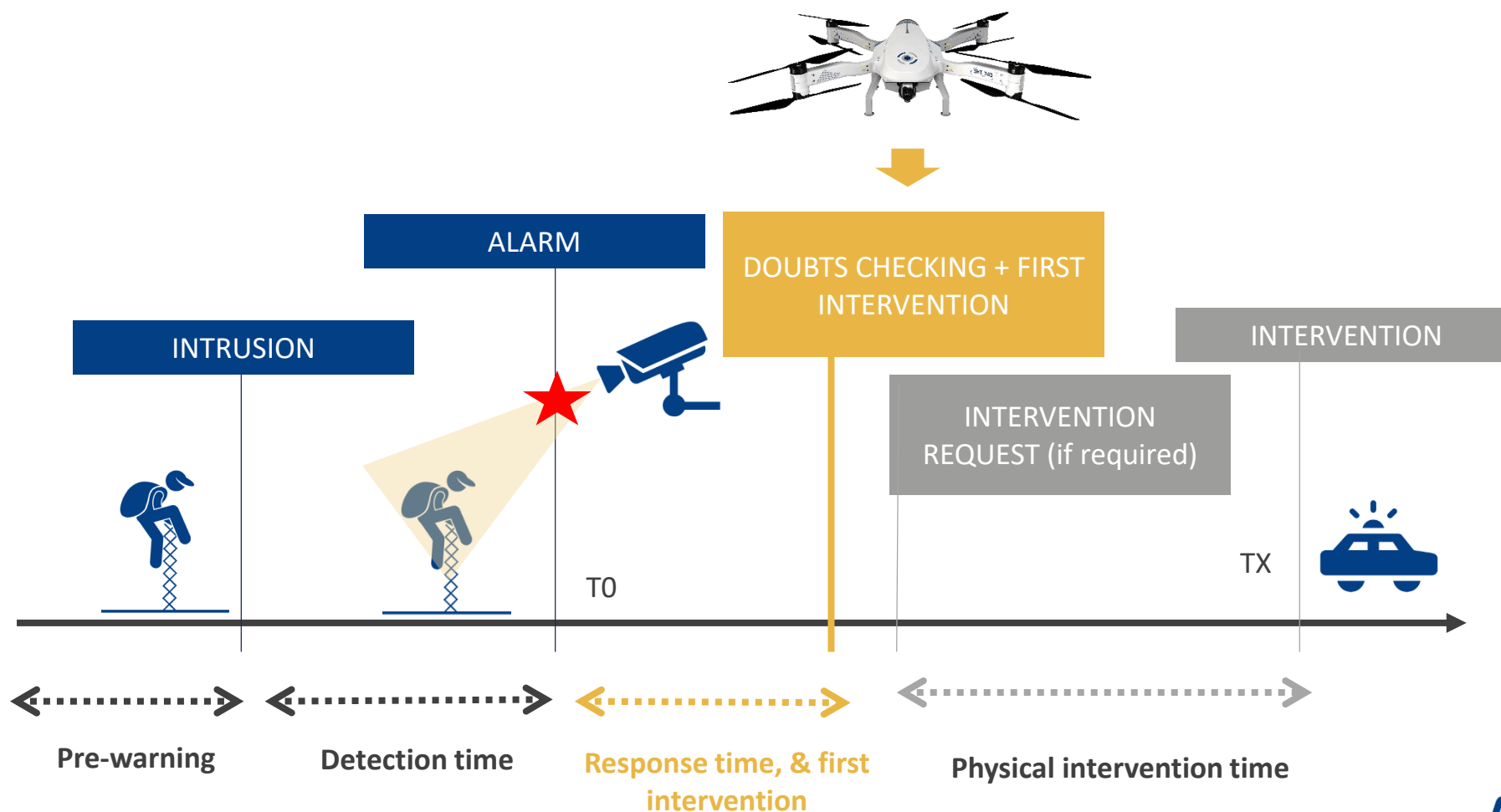
Arrival on spot in **2 min**

Arrival on spot in **1 min**

200 m



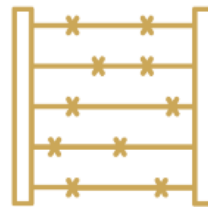
BENEFITS OF SITUATIONAL ASSESSMENT WITH DRONE (2/2)



**SHORTER
RESPONSE TIME**



**DETERRENT
EFFECT → QUICK
1ST RESPONSE**



PERIMETER PATROLS



PERIMETER PATROLS ARE USUALLY TIME-CONSUMING



Example of a **140 ha** site

→ 7400 of fences to check

→ At least 2h patrols

Presence of at least
2 guards



Expensive workforce
~ 180 k€ for an annual permanent
presence

Dangerous patrols

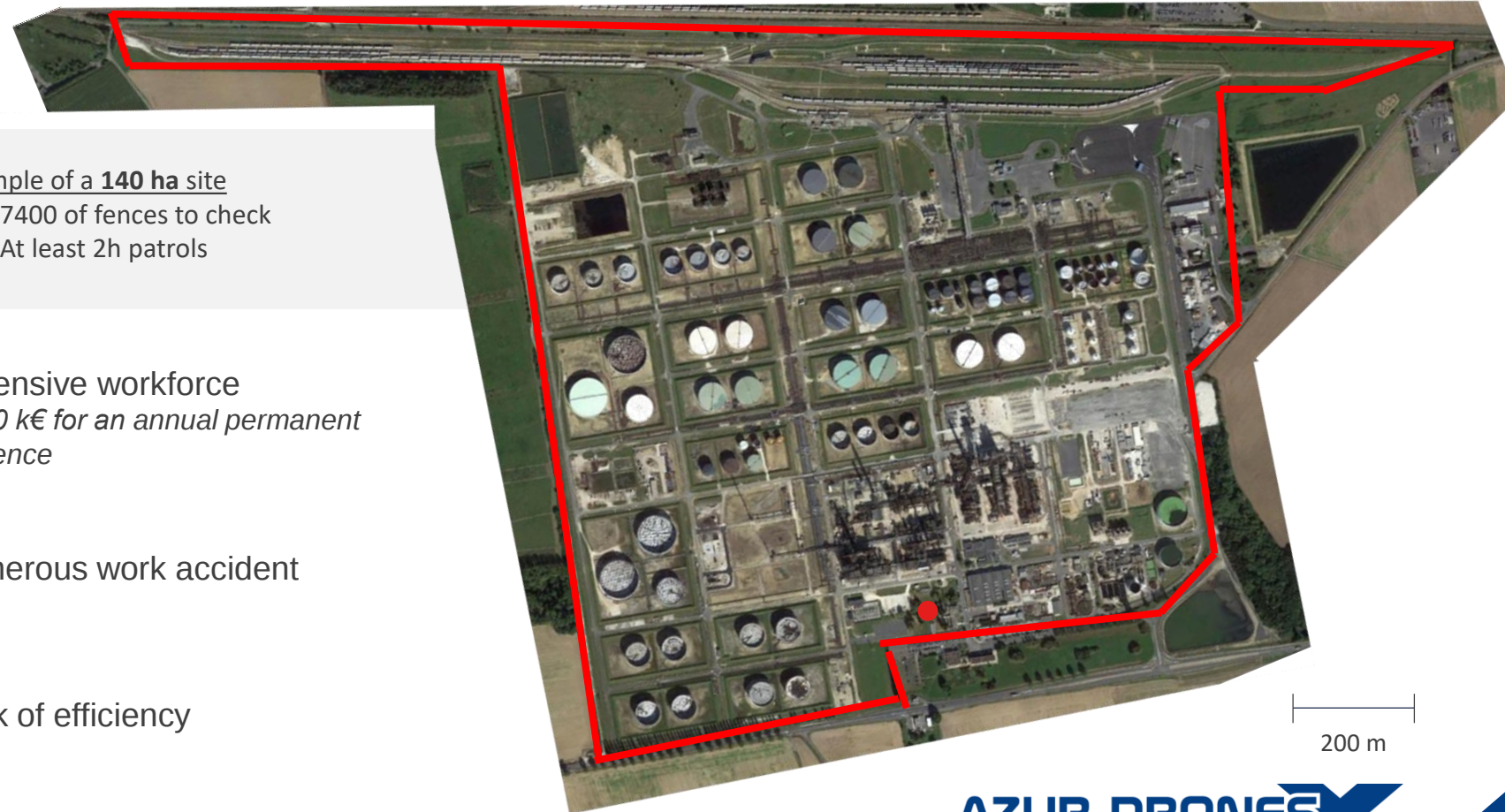


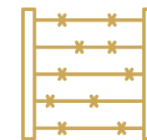
Numerous work accident

Distraction risk



Lack of efficiency





PATROLLING WITH A DRONE (1/2)

SPEED

Patrols **4x** faster



Flight speed
4 m/s



PERFORMANCES
Higher vision capacities

2 patrols of 4500 m
over 25 m altitude
→ 2 x 18 min





CRISIS MANAGEMENT

CRISIS MANAGEMENT: A LACK OF USEABLE INFORMATION

- Limited communication between crisis unit and field team (phone, radio, ...)
- Complex real-time retransmission
- Lack of relevant information : difficulties for security teams to carry out safe and efficient intervention



DRONES FOR CRISIS MANAGEMENT



SITUATIONAL
FOLLOW-UP



INTERVENTION
FOLLOW-UP



MEN SAFETY

Arrival on spot in
2 min
Situational follow-up for
20 min



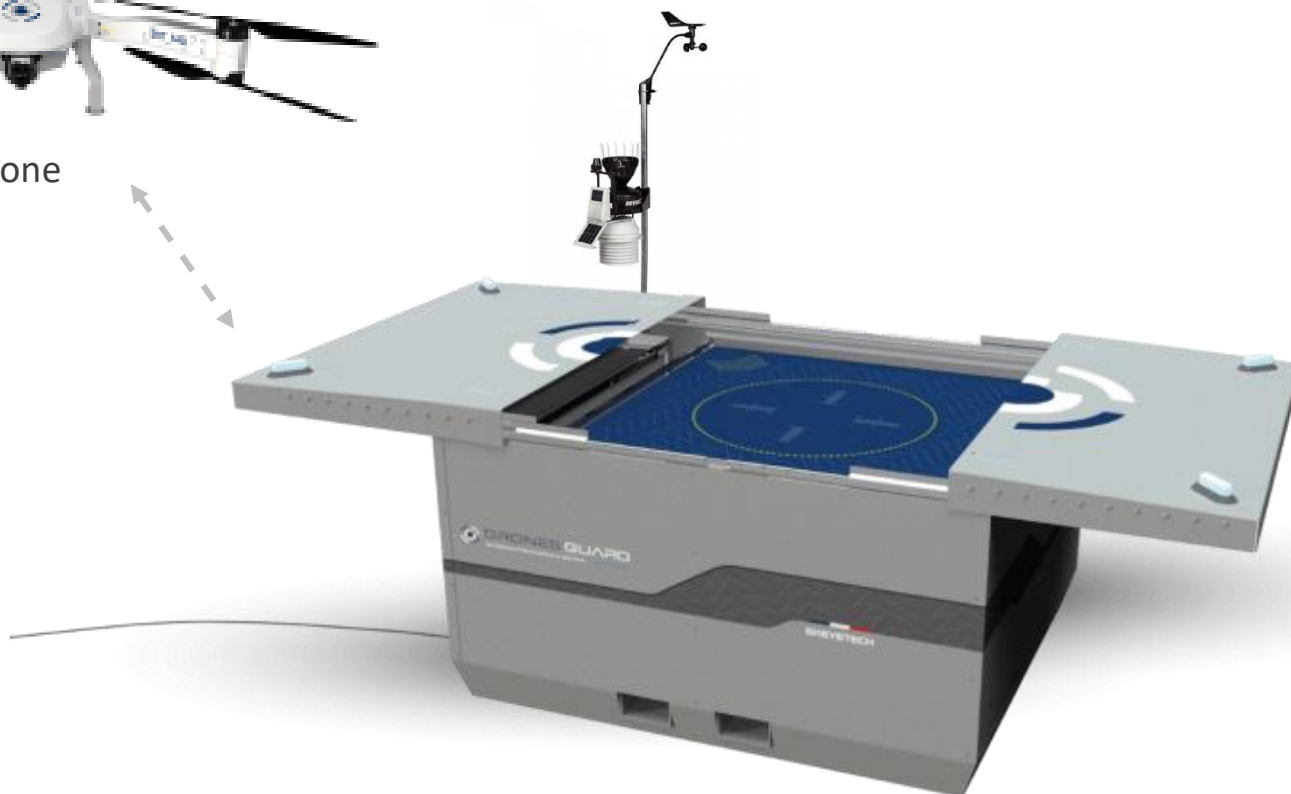
SKEYETECH PRESENTATION



SYSTEM COMPONENTS



Drone



Connected station + weather station



Video Management System

CAMERA CHARACTERISTICS



Optical camera

- Resolution: HD 720p
- Optical zoom x20, digital zoom x4
- Field of view: WFOV 60°

Thermal camera

Resolution: 640x480
Digital zoom x4

CAMERA PERFORMANCE AT 30M ALTITUDE



PPM* 10

SURVEILLANCE

Large areas surveillance



30

DETECTION

Human/object detection
at **600 m**



100

RECONNAISSANCE

Human/object
reconnaissance up to
200 m



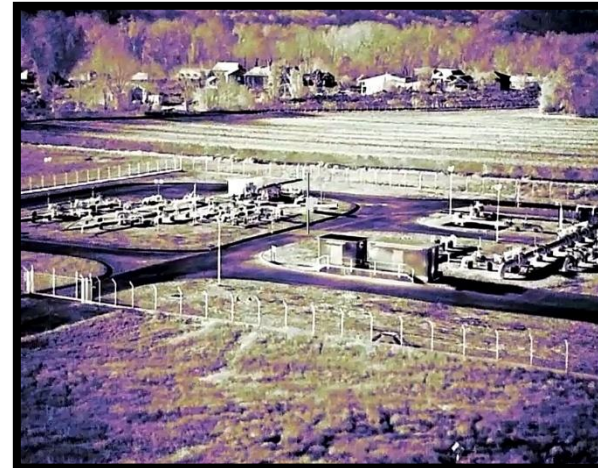
400

IDENTIFICATION

Human identification at **50 m**

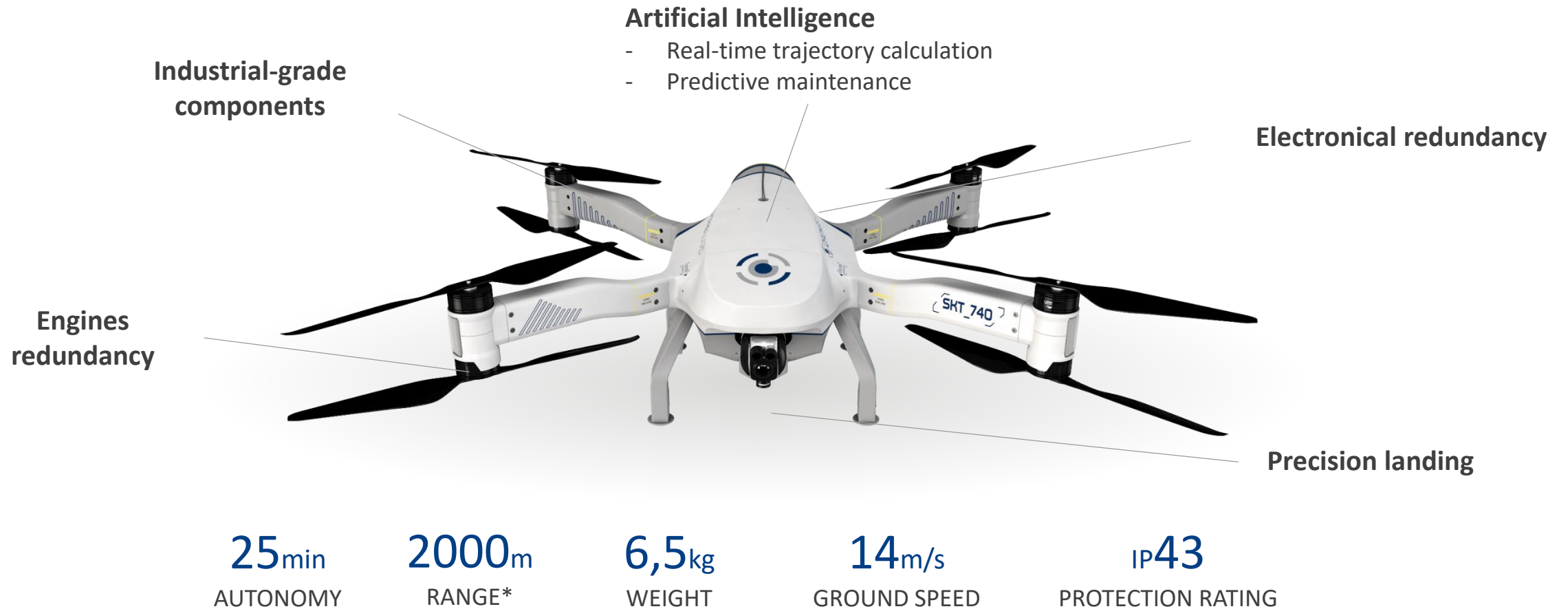
* Pixels per meter

CAMERA PERFORMANCE AT 30M ALTITUDE



Committed all the way

DRONE CHARACTERISTICS



* According to national regulations. Currently limited to 1000m in France.

STATION CHARACTERISTICS

PROTECT

- IP 65

DEPLOY

- Deployment in < 20sec
- Weather station: anemometer and rain gauge

CONTROL

- Secured data transmission

RECHARGE

- Recharging ~ 1.5 x mission time



VMS CHARACTERISTICS

CONTROLLABLE FROM MILESTONE

- ✓ Launch of automatic missions (patrols)
- ✓ Triggering missions on alerts
- ✓ Real-time video feedbacks
- ✓ Camera control (joystick or clic)
- ✓ Clic & Go* navigation



INNOVATIVE AND CERTIFIED SOLUTION

First and only automated drone certified in Europe

DGAC approval:

- ✓ Over private areas
- ✓ Beyond Visual Line Of Sight (BVLOS)
- ✓ Day or night
- ✓ Urban areas
- ✓ Under simple supervision of a remote operator



Designed and produced in France





INSTALLATION CONDITIONS

A COMPLETE SERVICE

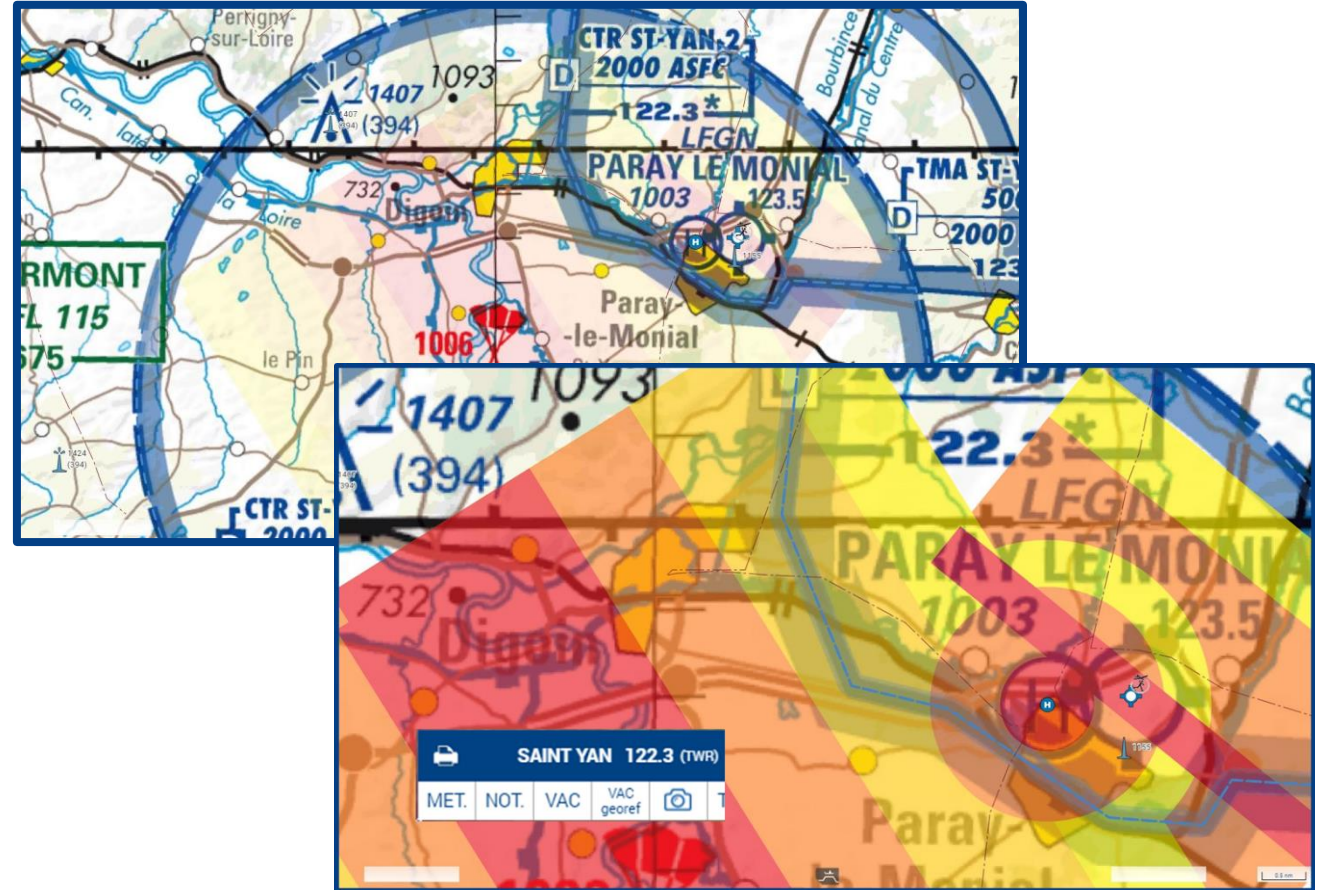
Azur Drones provides a complete service to ease SKEYETECH implementation on any site.



PRELIMINARY STUDY

PRELIMINARY
STUDY

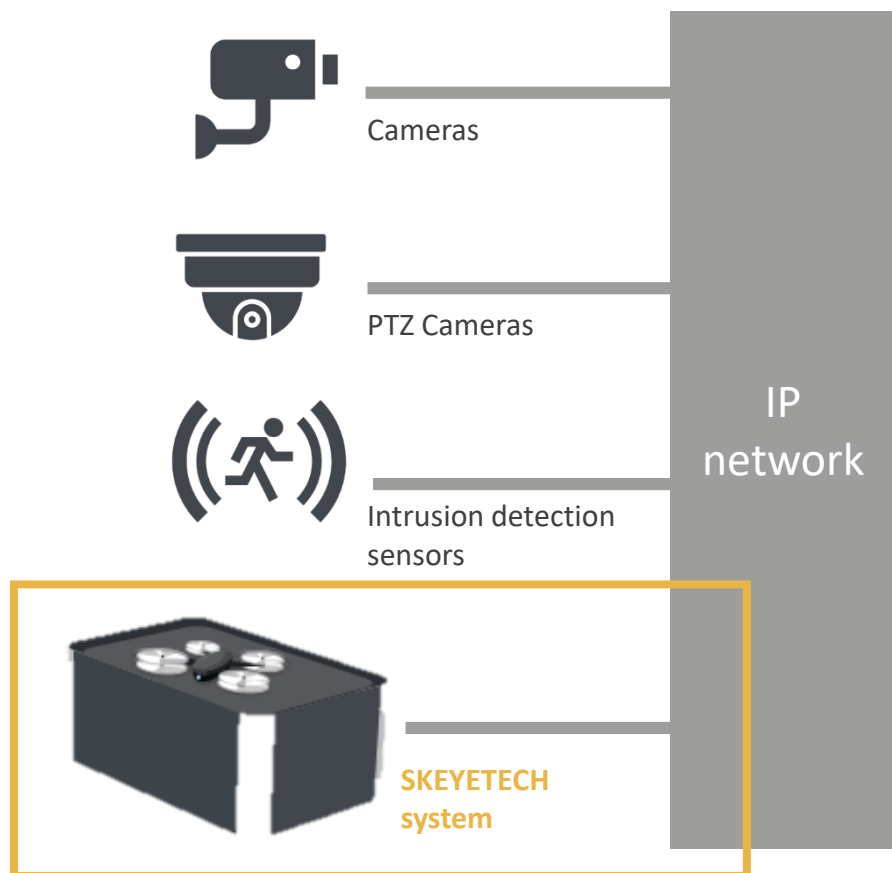
1. Regulatory framework and aeronautical environment studies
2. Prior visit to identify works and team training to be carried out, specific constraints and required installation authorizations
3. Risk analysis



ON-SITE INSTALLATION

- ✓ Zone 3-D mapping for VMS integration
- ✓ Installation and station connection
- ✓ System configuration (secondary landing places, areas of relocation, flight limits, No Fly Zones, missions...)
- ✓ Tests of recorded points (take-off and relocation)
- ✓ Parameters and safe behaviours tests
- ✓ Scenarios validation
- ✓ Presence during functioning

A STREAMLINED INTEGRATION



VMS VIDEO MANAGEMENT SYSTEM

- Live video
- Alarm management
- Event investigation

Video wall



Contact

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