



**Detección y neutralización de  
drones**



# SYSTEM APPLICATION

AIRPORT



ENERGY



GOVERNMENT facilities



TELECOM



BORDERS

PRIVATE sites



RADAR IQ



OIL & GAS



PRISONS



SEA PORT





# PROTECCION CONTRA:



- ▶ Terrorismo
- ▶ Hurto
- ▶ Contrabando
- ▶ Cruce fronterizo
- ▶ Espionaje
- ▶ Vandalismo
- ▶ Vigilancia encubierta
- ▶ Amenaza a la seguridad de la aviación

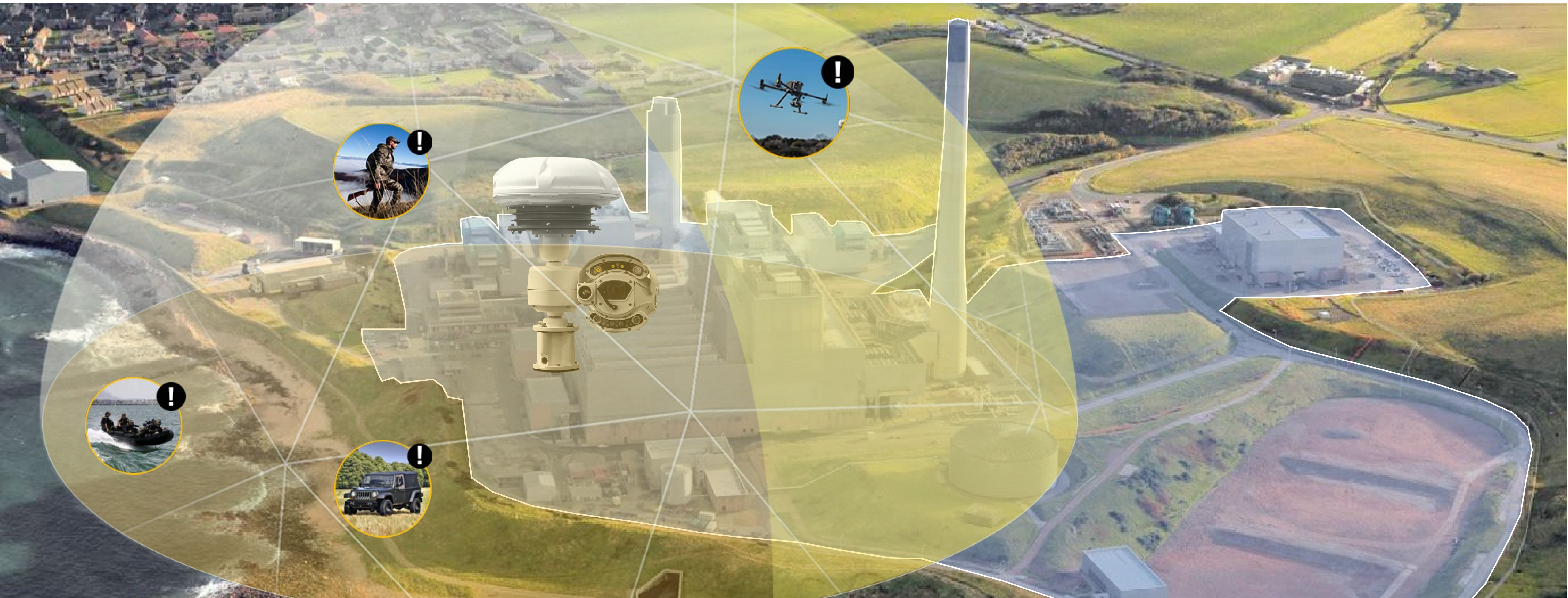




# THE PURPOSE OF RADAR-IQ



- ▶ Main purpose of the RADAR-IQ is to detect and track potential intruders on the approaches to the protected area.
- ▶ The RADAR-IQ system provides detection of targets moving on the ground, water surface and in the air.





# THE COMPOSITION OF THE RADAR-IQ SYSTEM



The complex is made as a monoblock  
Key components of the product:

- ▶ Radar sensor
- ▶ High Speed PTZ camera with 360x180 degrees field of view
- ▶ Intelligent Controller
- ▶ Countermeasures (jamming device)

All components are configured and calibrated in the factory, the product is completely ready for operation





# SCALING



- ▶ To protect large or long sites several RADAR-IQ units can be installed and joined into single solution



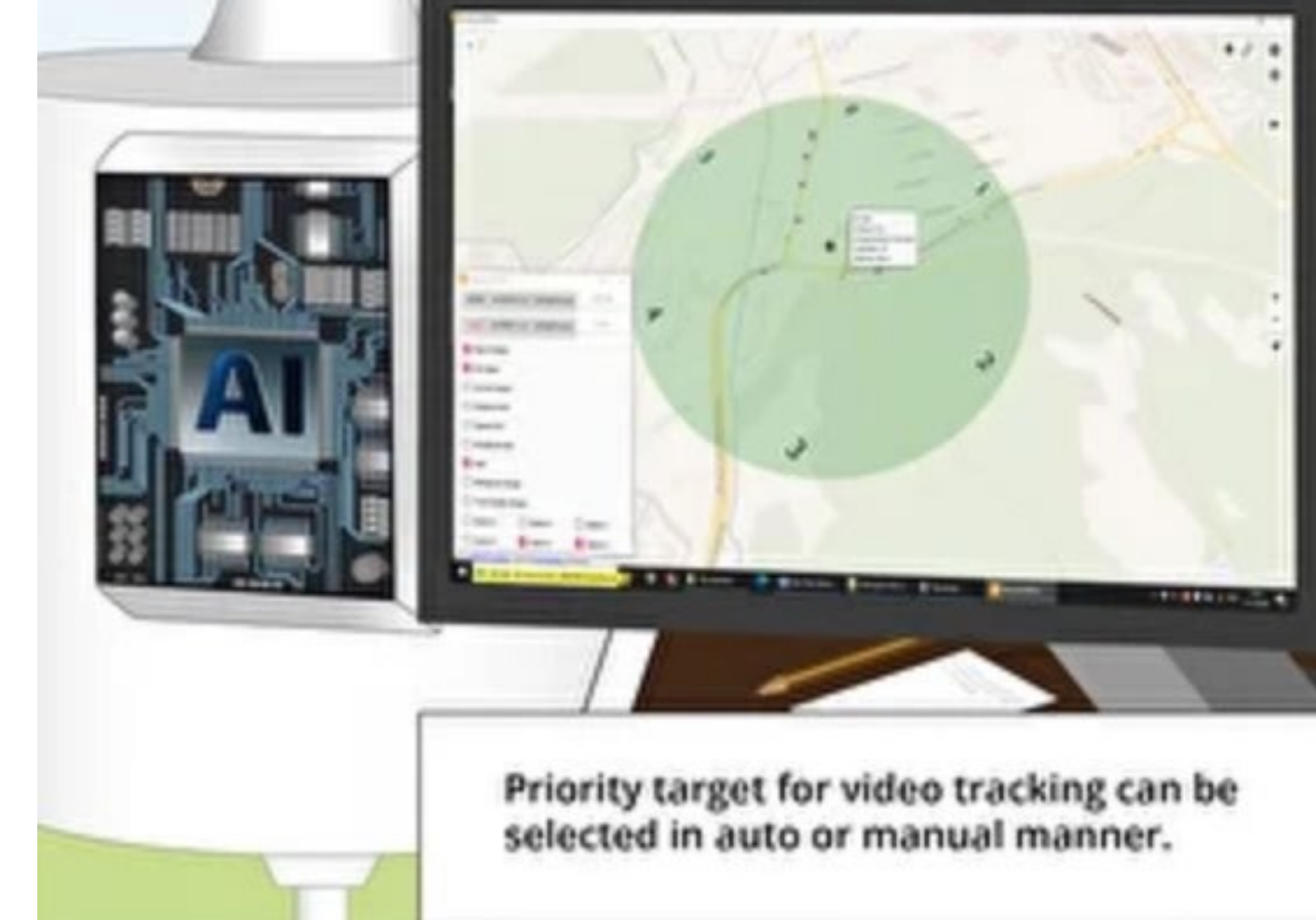


# OPERATION SCENARIO: Target detection



The Radar-IQ perimeter protection system is based on Pulse-Doppler radar-type motion detectors.

Our radar not only detects multiple moving targets, but also collects information about it: its size, speed, direction of movement, as well as spatial position of the target.





# OPERATION SCENARIO: Target processing

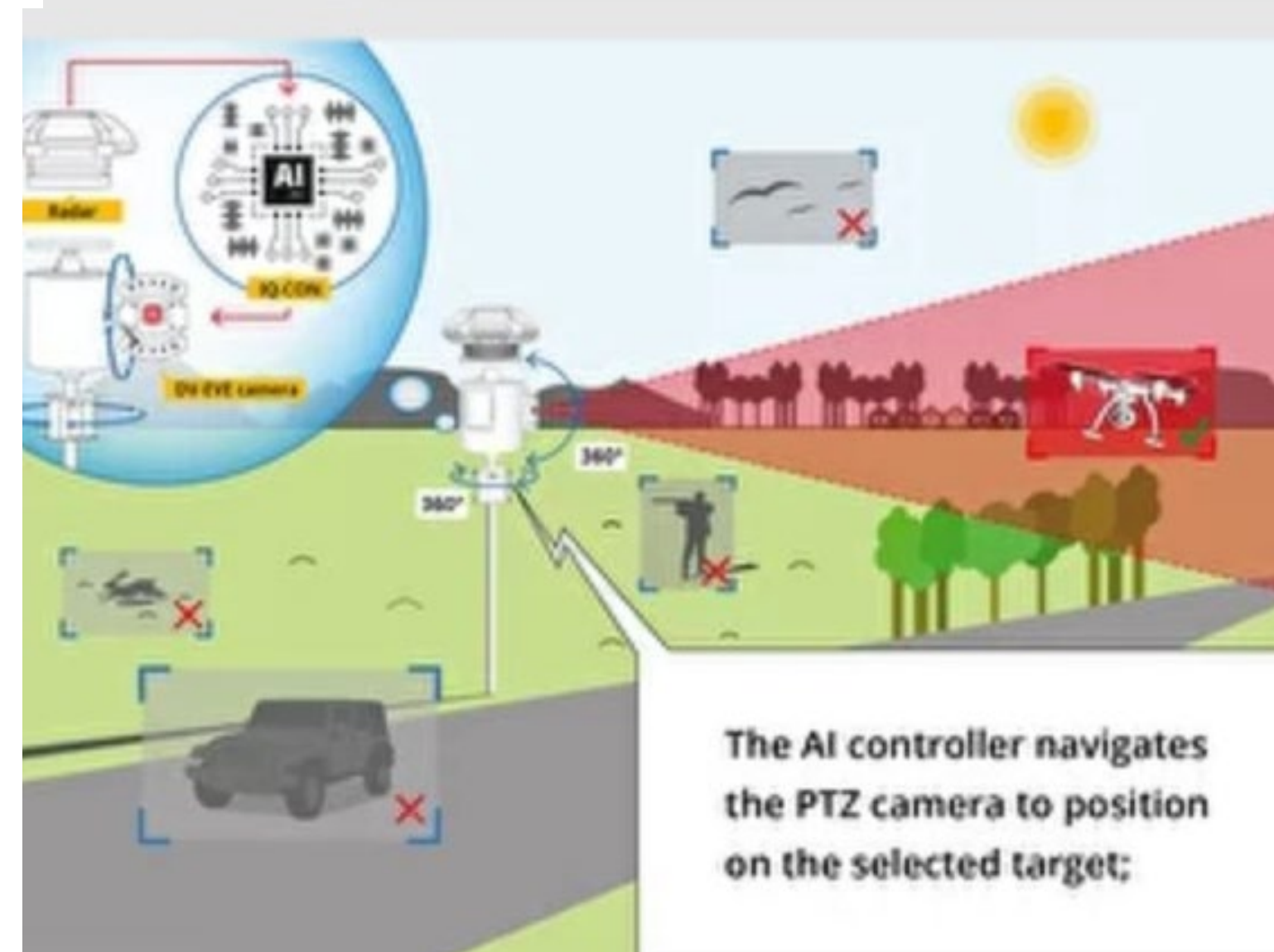
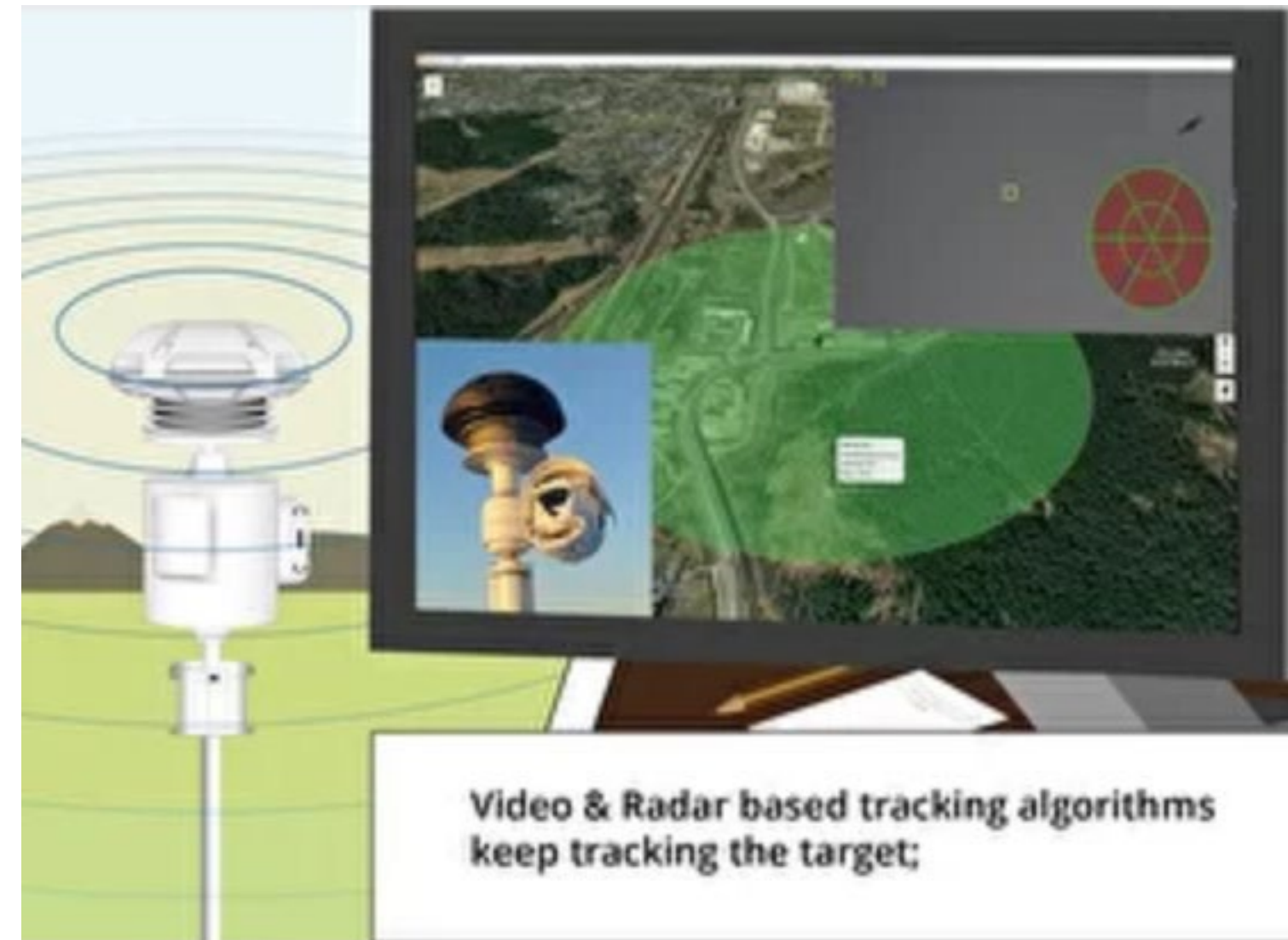


All detected targets are analyzed by CORE-IQ AI controller, which sorts targets, determining their class and evaluate level of threat for a particular site.

Then CORE-IQ controller aims the DV-EYE camera module to visually confirm the target.

The video analytics recognizes detected target.

Further, the video analytics is able to control the DV-EYE camera module, allowing to track the target based only on the data from the camera.



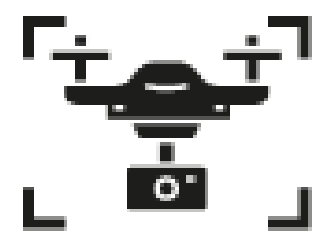


# FEATURES AND BENEFITS

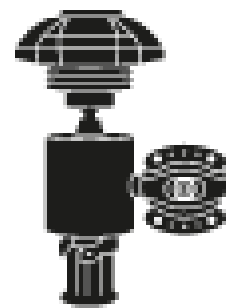
---



High detection probability with a minimum of false alarms



Visual automatic tracking of targets based on neural network video analytics



All-in-One system design



Weather resistant performance 24/7



360 degrees field of view with no blind spots



# ALL-IN-ONE CONSTRUCTION



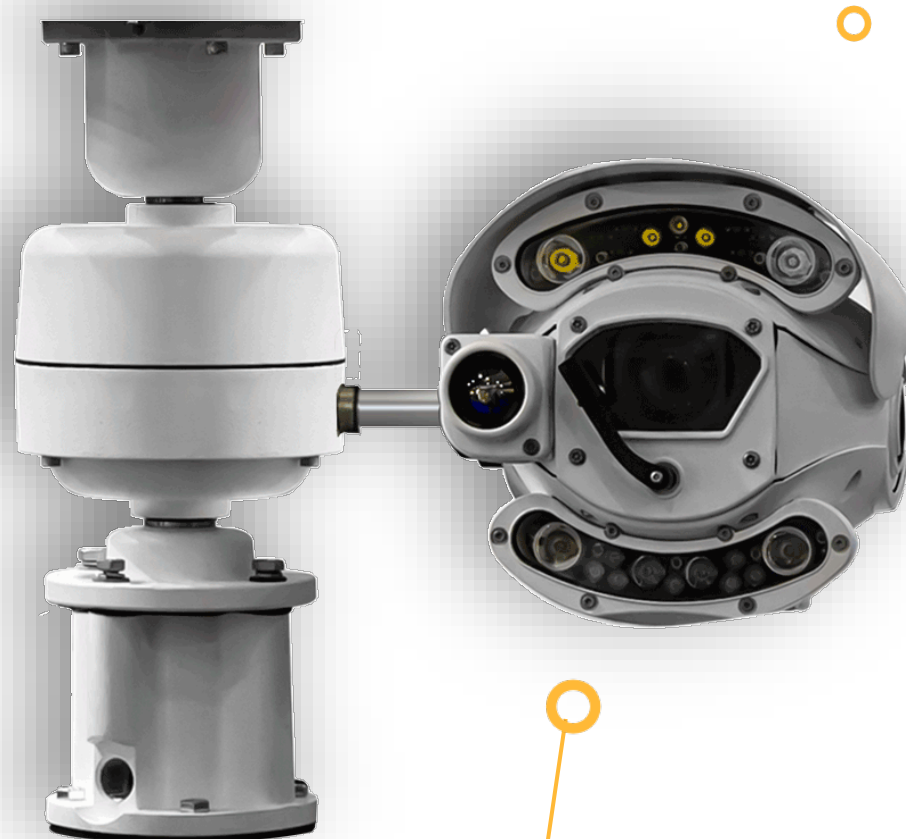
## JAM-ST2

- RCIED Jammer JAM-ST2 may be used to protect stationary objects against reconnaissance activities using commercial drones.



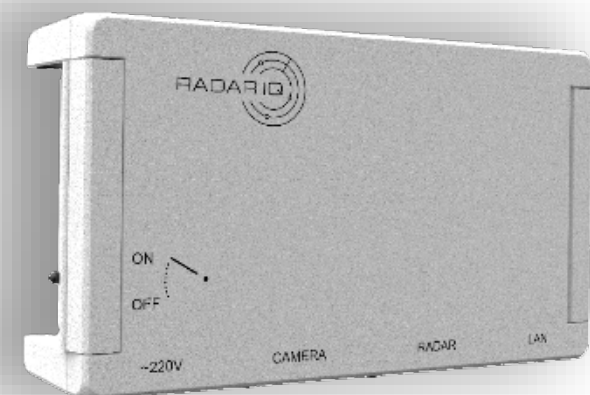
## DR-500 Radar

- Fair 3D Solid State Technology
- Hi Probing (30 kHz) & Track update speed (4Hz)
- Low power and Low emission
- Full Dome coverage of 500m radius



## DV-EYE camera module

- Unique construction with upper radar mounting
- Wide range of options (camera, thermal and lighting)
- Balanced with radar FOV



## CORE-IQ AI controller

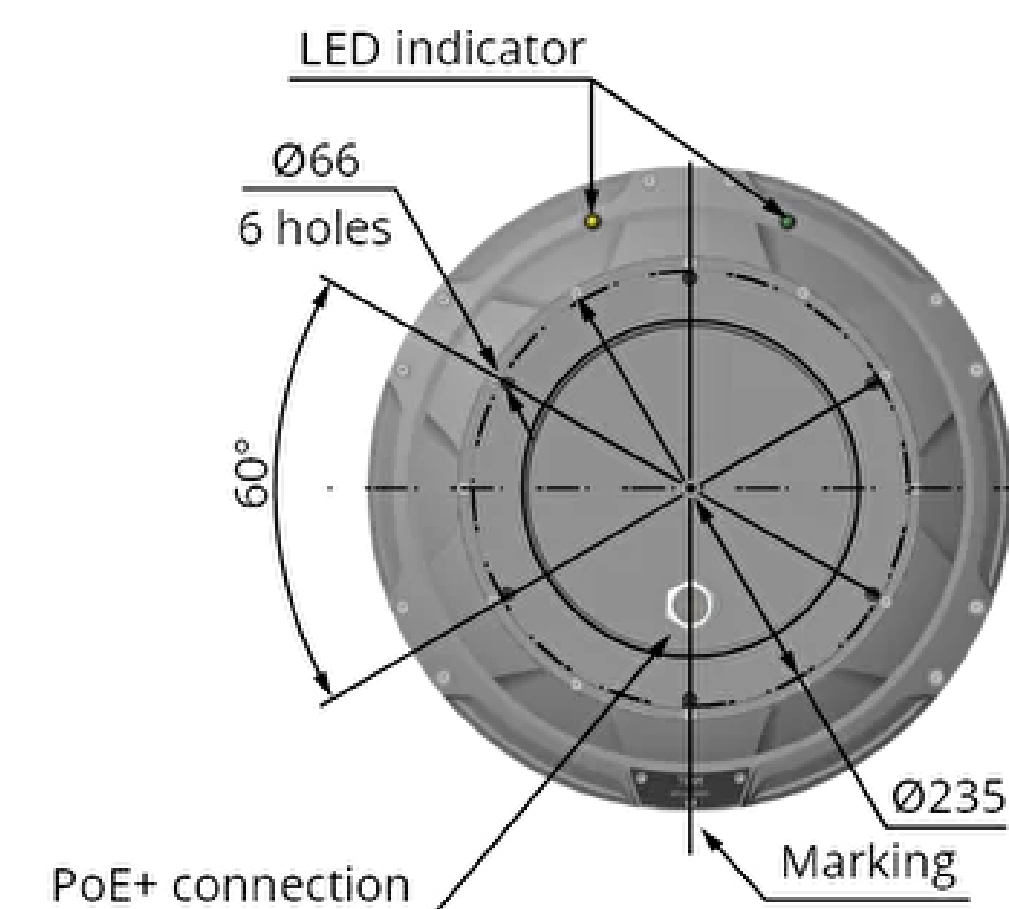
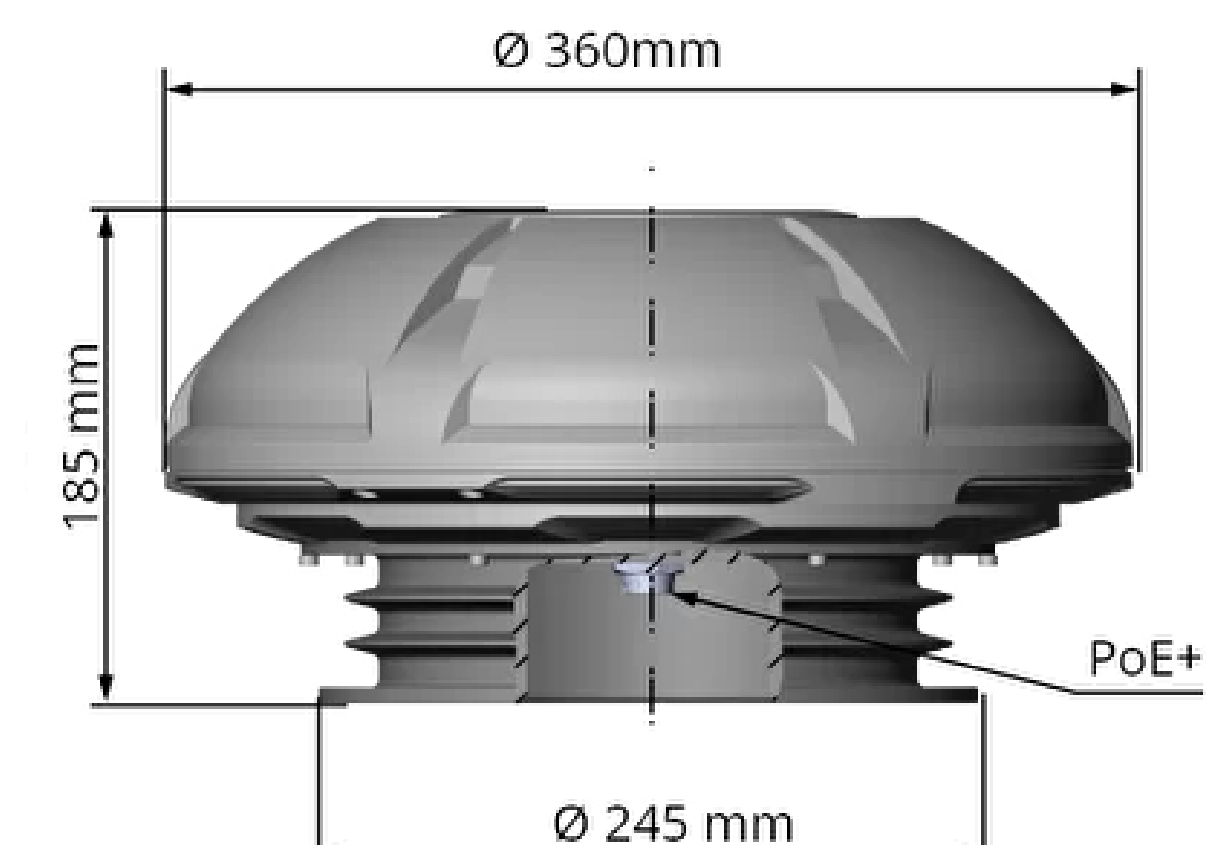
- In-house optical PTZ tacking algorithms
- Detection, Recognition and Confirmation of the target in the video frame
- Radar Data AI analytics (target classification, filtering and prioritizing)



# DR-500 TECHNICAL DATA



| Radar Features                            | DR-500                                  |
|---|---|
| Radar type                                | Pulse Doppler Solid State Non-Kinematic |
| Operating Frequency                       | C-Band (5,7÷5,8 GHz)                    |
| Radar Field of View (Azimuth x Elevation) | 360° x 180°                             |
| Detection Range (general / maximum DPA)   | 500 m / 700m                            |
| Detection Range examples:                 |   |
| DJI Phantom 4                             | 450-500m                                |
| DJI Mavic 2                               | 350-500m                                |
| Human                                     | 500m                                    |
| Simultaneous Tracking Targets             | Up to 96                                |
| Minimum RCS (Radar Cross-Section)         | 0,01 m <sup>2</sup> - Drone             |
| False Alarm Filter                        | Intellectual                            |
| Dynamic Power Allocation                  | Yes                                     |
| Power / Data                              | PoE+ / Ethernet                         |
| Operating Temperature                     | -40°C to +60°C                          |

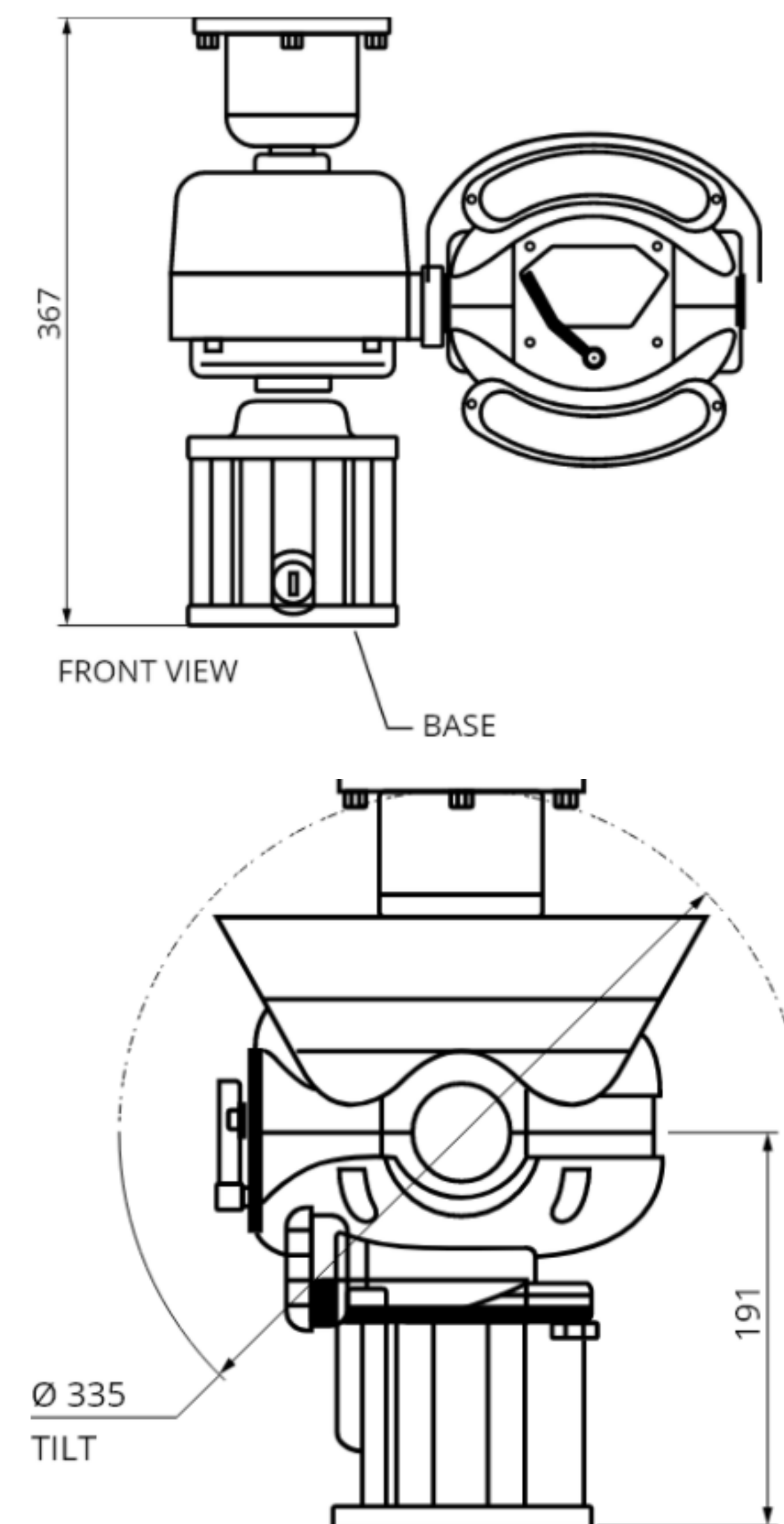




# DV-EYE TECHNICAL DATA



| DV-EYE Features     | DV-EYE-v30xir250                         |                   |
|---------------------|--|-------------------|
| General features:   |  |                   |
| Ambient temperature | - 50°C + 60°C (with additional heater) * |                   |
| Protection          | IP 67                                    |                   |
| Weight              | 12 kg                                    |                   |
| Power               | 24V / 30V DC / 100W                      |                   |
| Camera:             |  |                   |
| Camera sensor       | Video 1/2.8" Exmor-R / 2.13 Mpix         |                   |
| Lens                | f=4,3-129mm (30x) / 63,70 – 2,30         |                   |
| Sensitivity         | color – 0,0013lux / BW - 0,0008lux       |                   |
| Codec               | 1920x1080 / Dual stream                  |                   |
| IR lighting:        | IR350 meter                              |                   |
| PT drive:           |  |                   |
| Pan                 | 0.1 – 120°/sec                           | 360° constant pan |
| Tilt                | 0.1 – 120°/sec                           | +/- 180°          |
| Presets             | 360°                                     |                   |





# CORE-IQ TECHNICAL DATA



## Main tasks performed:

- Automatic object video recognition;
- Automatic tracking of a recognized object using a PTZ camera;
- Video stream encoding;
- Radar data processing.

## Specifications

## CORE-IQ

Outgoing video stream

FULL HD (1920×1080)

Incoming Video Stream

FULL HD (1920×1080)

Dust / Moisture proof

IP 65

Power (V)

220

Power (W)

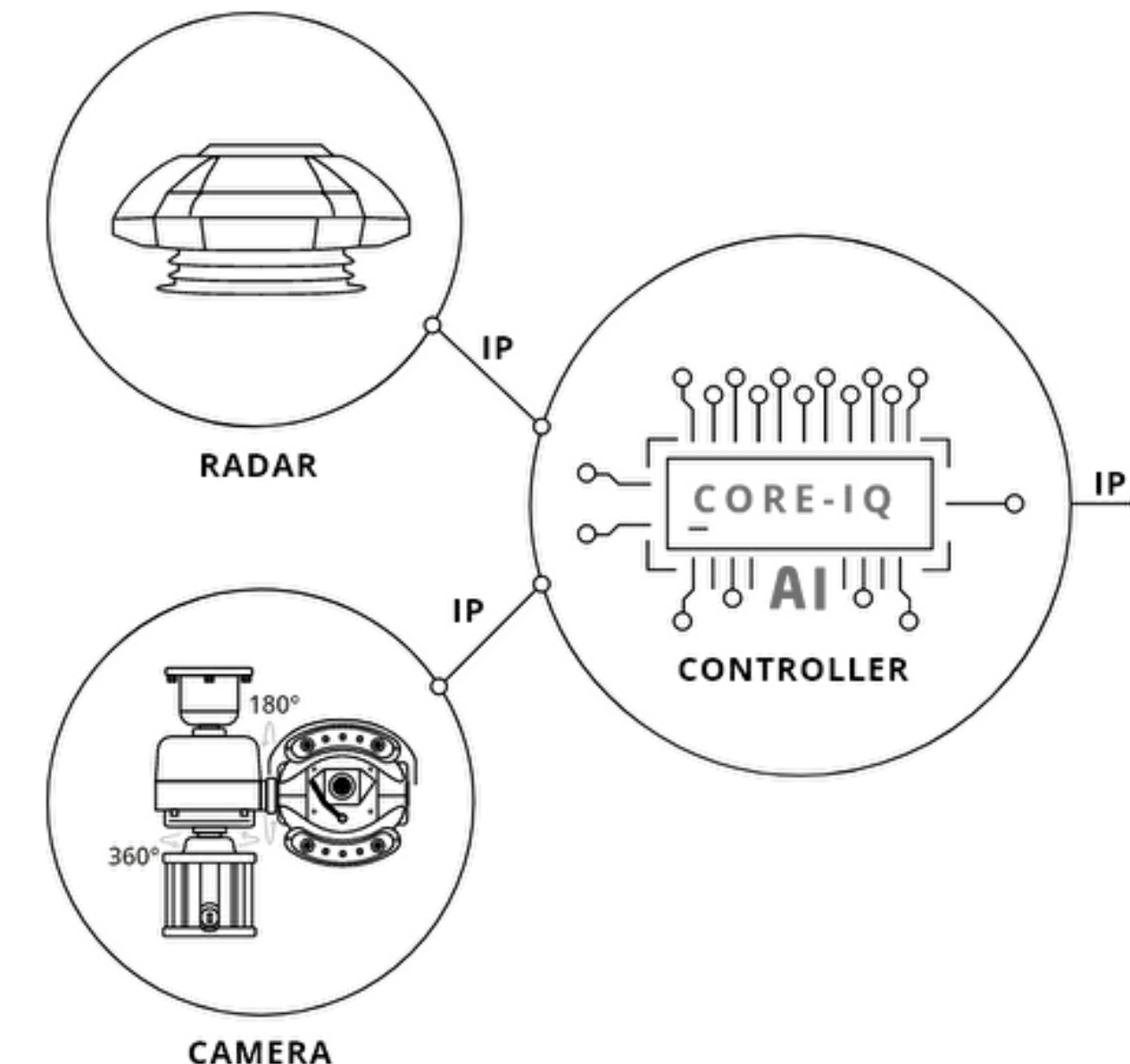
150

PTZ camera compatibility

DV-EYE / ONVIF

Operating temperature

-40°C to +60°C





# JAM-ST2 TECHNICAL DATA



| Specifications  | JAM-ST2                                     |
|---|---|
| Ranges of jammed frequency channels of drone's control system | 450 MHz, 868 MHz, 915 MHz, 2,4 GHz, 5,8 GHz |
| Types of jammed drone's navigational systems                  | GPS, GLONASS, Galileo, BeiDou               |
| Type of jamming signal for drone's control system             | Wideband barrage                            |
| Type of jamming signal for drone's navigational system        | Simulation                                  |
| Operational temperature range, °C                             | -20...+45                                   |
| Dimensions of the main Noise Signal Generator unit mm         | Diameter 550, Height 650                    |
| Dimensions of the additional Noise Signal Generator unit mm   | Diameter 550, Height 650                    |
| Mass of the device's set, not more than, kg                   | 52  |
| Integral output power (at 50 Ohm load), W                     | 34  |

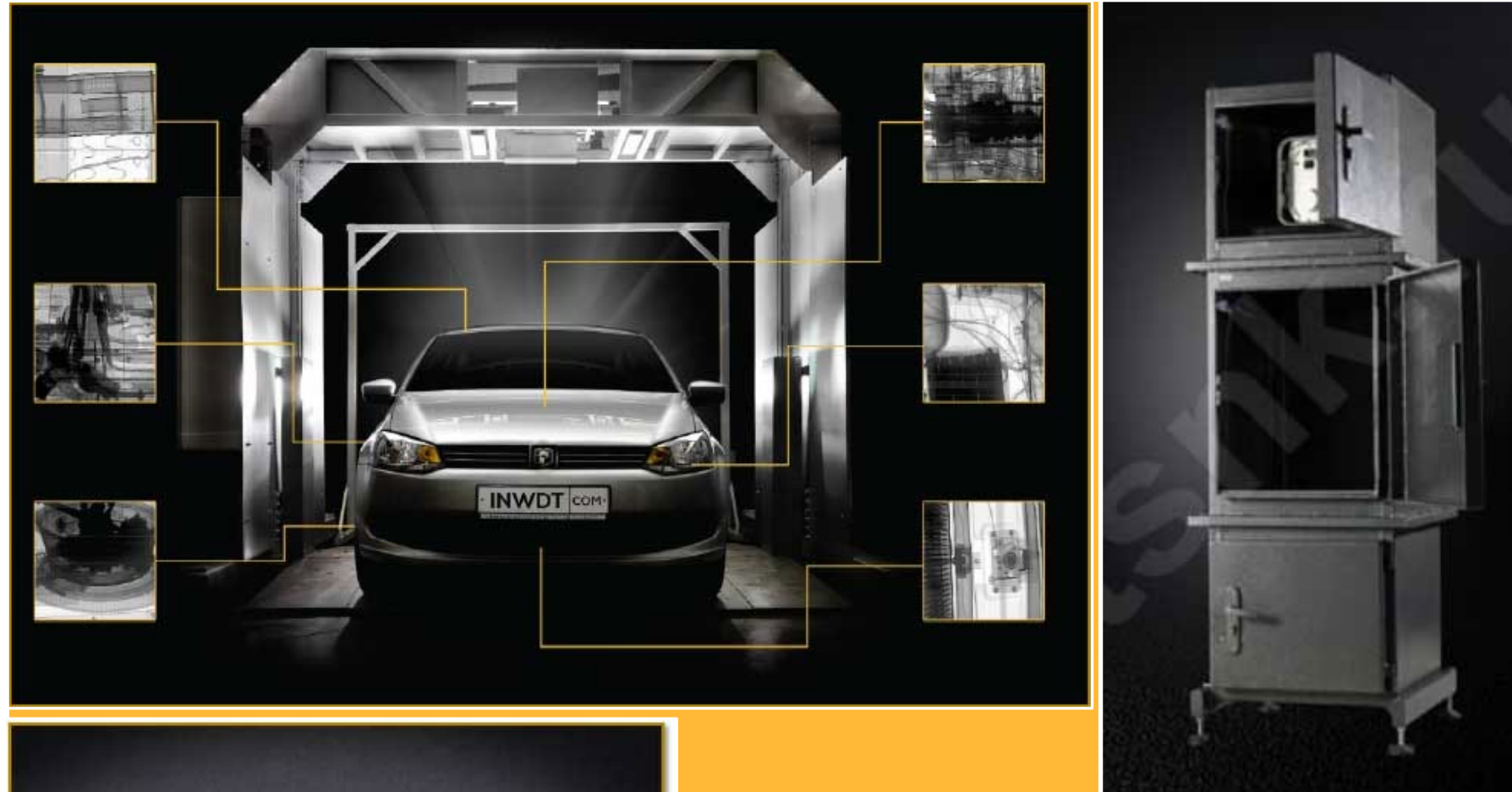



## Main tasks performed:

The device creates a hemispherical protective zone in which drone's navigational system and control channels of control system are jammed leading to its emergency landing.



# ABOUT RADAR-IQ



Radar-IQ is a brand of  **TSNK** company dedicated for perimeter and area protection solutions

## About TSNK

- ▶ Full cycle Developer and Producer for Security equipment
- ▶ Over 30 years of experience in the development and implementation of innovative technologies
- ▶ More than 300 employees





**Gracias por su atención**

<http://radar-iq.com/>  
[sale@radar-iq.com](mailto:sale@radar-iq.com)

