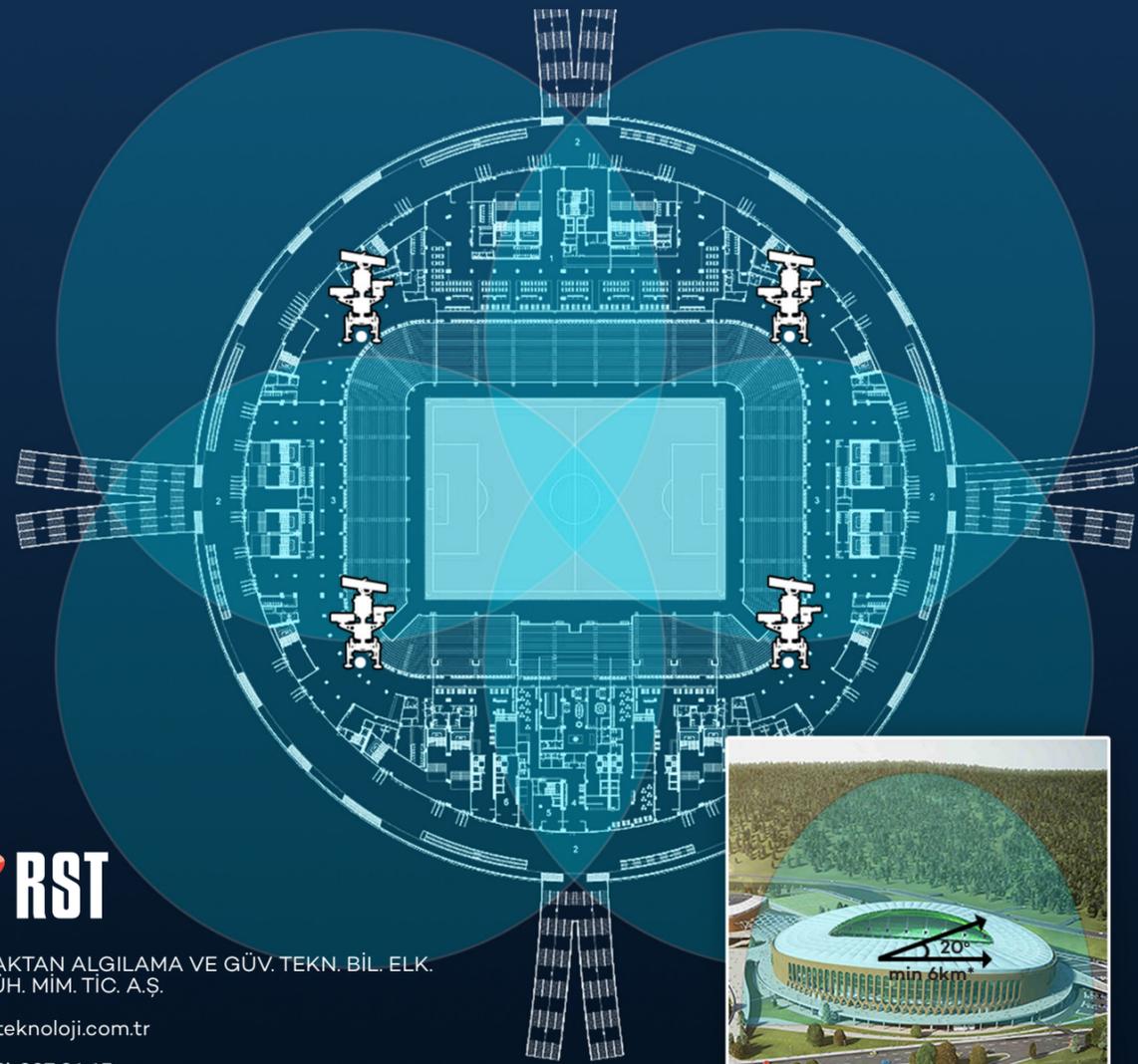
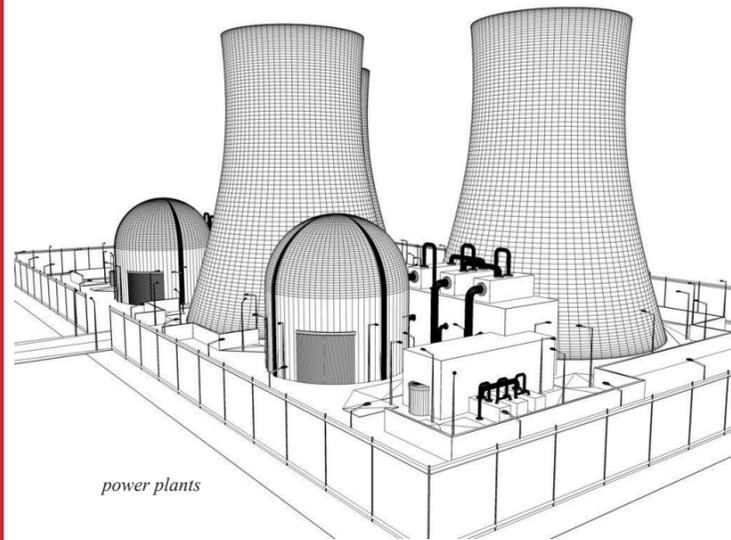


As concerns about potential security threats increase, anti-drone systems developed with new generation technologies are rapidly becoming worldwide.

The number of countries concentrating their studies on the tools and methods of monitoring and passivating unmanned aerial vehicles is increasing rapidly with each passing day.

It is known that there are more than 200 different anti-drone systems in recent years and about 40% of them can only be used for detection, 35% only for prevention and 25% for simultaneous detection, tracking and prevention.



\*(RCS=0,01 m<sup>2</sup>)



RST UZAKTAN ALGILAMA VE GÜV. TEKN. BİL. ELK. DAN. MÜH. MİM. TIC. A.Ş.

www.rstteknoloji.com.tr

+90 (312) 287 01 15

info@rstteknoloji.com.tr

Hacıtepe Üni. Teknoloji Geliştirme Bölgesi  
Universiteler Mah. 1596. Cad. No: 95/6-706800,  
Beytepe-Çankaya, Ankara-Turkey



STRATEGIC FACILITY PROTECTION SYSTEMS



## Detection

Anti-drone systems utilize various technologies in detecting and tracking drone and mini UAVs, and the aforementioned capabilities can be used alone or together to be more effective.

In existing detection, classification and tracking systems; It uses

- Radar,
- Radio Frequency (RF),
- Electro-Optic (EO),
- Infrared (IR) and
- Acoustic Sensor

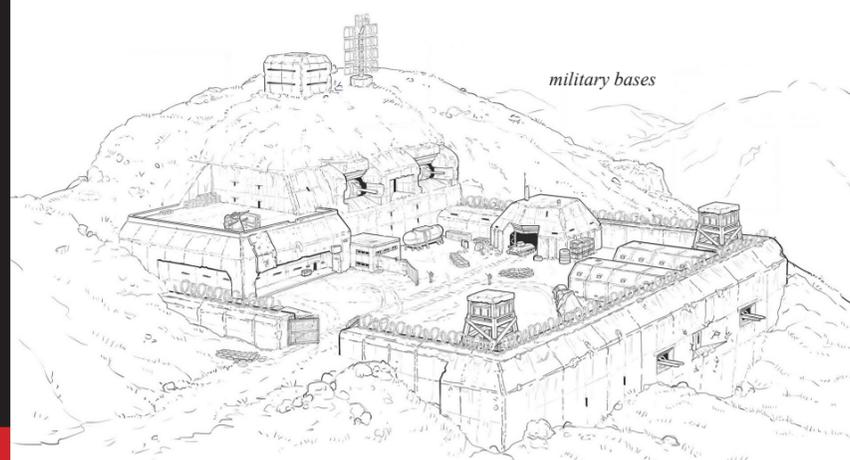
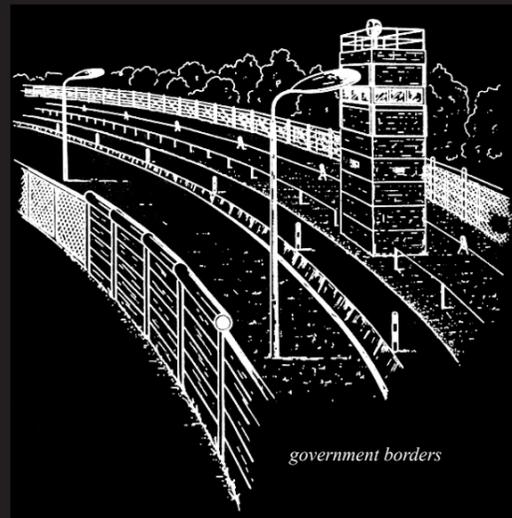
methods.

One of the most common methods are radar systems. In radar systems, algorithmic techniques can also be used to distinguish UAVs from other weather elements and birds.

By scanning the frequency ranges used by radio frequency (RF), drone and mini UAVs, it can detect the threatening elements.

Electro-optic (EO) sensors enable imaging, acoustic sensors capture sound, and infrared sensors allow detection of the drone and mini UAVs by capturing heat dissipation.

These techniques alone are not effective in detecting and monitoring all threatening elements, and existing systems are based on multiple use of these methods.



## A Dynamic Defense Against Enemy Drones with "KUBBE"

RST develops powerful, ready-to-use, end-to-end solutions to protect critical bases and zones defined as strategic facilities such as olympic stats, government borders, power plants, oil pipelines, military bases, airports against drone and mini UAV threats.

While the KUBBE Anti-Drone System offers superior drone detection and tracking performance with its radar system and optional thermal / optical cameras, it also allows the drone and mini UAV threats to be neutralized with the optional RF Jammer. In the KUBBE Anti-Drone System, in order to create the most effective solution against threats, according to on-site inspections; different configurations and sensor types can be integrated according to the purpose. On the other hand, if necessary, these different sensors and countermeasures can be integrated together in positions such as on the vehicle.



UAV Detection Radar is used for low altitude moving targets over land or sea. While it performs detection and classification, it provides angle, range, Radar Cross Section, radial velocity, heading, width of Doppler Frequency Spectrum, target tracking over map information of targets.

### Precise and State of Art

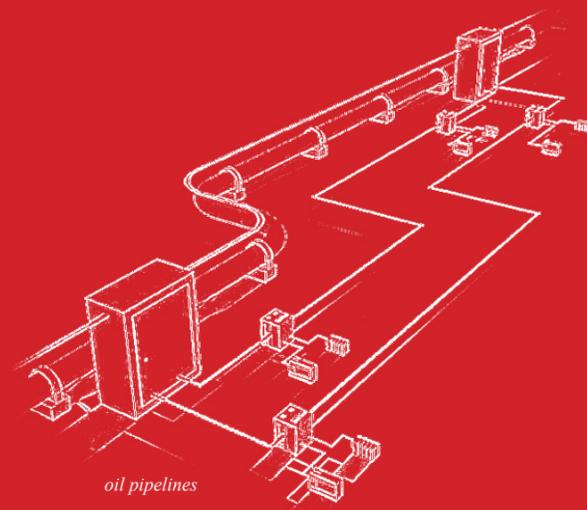
It detects low RCS targets with remarkable range performance which is very important in today's threat environment. It is powered by solid state transmitter and it is driven by user friendly open architecture software.

### Mobile & Flexible

With its unique design, it can be located anywhere easily. It can be integrated to car, truck, trailer etc. easily. It supports Industry-standard communication interface.

### Robust and Reliable

With high MTBF and low MTTR, it is an autonomous system to operate under all-weather and day and night conditions.



## Interdiction

On the other hand, different techniques can be used together to eliminate the detected unmanned aerial systems threats.

These techniques are often;

- functional destruction (softkill) (Jamming and spoofing) and
- physical destruction (hardkill) (bullet, nets, and laser etc.)

capabilities.

The jamming method causes drone and mini UAVs to land on the ground, return to the departure point or continue their flight suspended by disruption of radio frequency or satellite communication signals, and also the image transfer is interrupted.

Spoofing, on the other hand, is the technique of capturing the control or satellite connections of threat elements.

The prominent methods in counteracting drone and mini UAVs with their physical destruction capabilities are bullet, net and laser systems.

Conventional weapons that can be used widely are considered as an important option to equip anti-drone systems.

Systems that neutralize threat elements with the net are also one of the techniques currently used.

In addition, laser (directed energy weapons) weapons are a very effective method used against light, slow and low altitude drone and mini UAVs.

Operating Frequency Band	X-Band
Detection (%80 Pd and 10 <sup>-6</sup> Pfa)	Human: > 15 km Big vehicle: >28 km UAV (RCS=0,01 m <sup>2</sup> ): >6 km Helicopter: >25 km
Velocity Detection	0,2 – 100 m/s
Elevation Beamwidth	20°
<b>Accuracy</b>	
Azimuth	≤ 1° (RMS)
Range	≤ 5 m
Velocity	≤ 0,2 m/s
<b>Resolution</b>	
Azimuth	≤ 2°
Range	≤ 15 m
Azimuth Coverage	360°
Scanning Rate	90°/sec
Target Detection	+200 while TWS
Clutter Suppression	≥ 45 dB
Weight	≤ 75 kg
Dimensions	120 x 500 x 750 mm
Operational Readiness	≤ 10 min
Operating Temperature	-40 - +60 °C
Storage Temperature	-50 - +70 °C
MTBF	5000 hours

### Basic Functions

- Low altitude moving target detection over land and sea.
- Detection classification
- Angle, range, Radar Cross Section, radial velocity, heading, width of Doppler Frequency Spectrum
- Target tracking over map
- Track While Scan capability