



DRONES AND ANTI-DRONES





Capabilities

AVIATEK has a long history of commanding and controlling systems for the protection and management of critical infrastructure.



- AERIAL SURVEILLANCE - MISSION PLANNING AND MGMT.
- 3D MAPPING OF LARGE AREAS.
- DRONE SWARM MANAGEMENT WITH ONLY ONE OPERATOR.

- MULTI-BAND INTERFERENCE
- MULTI-TARGET INTERFERENCE
- DIGITAL INTERFERENCE PROCESSING



Aerial Surveillance

General

AIR SURVEILLANCE AND MONITORING (INDOOR/OUTDOOR)

TACTICAL SUPPORT FOR CIVILIAN AND MILITARY OPERATIONS.

SEARCH AND RESCUE OPERATIONS.

DISCOVERY DISASTER RELIEF AND RESPONSE OPERATIONS.

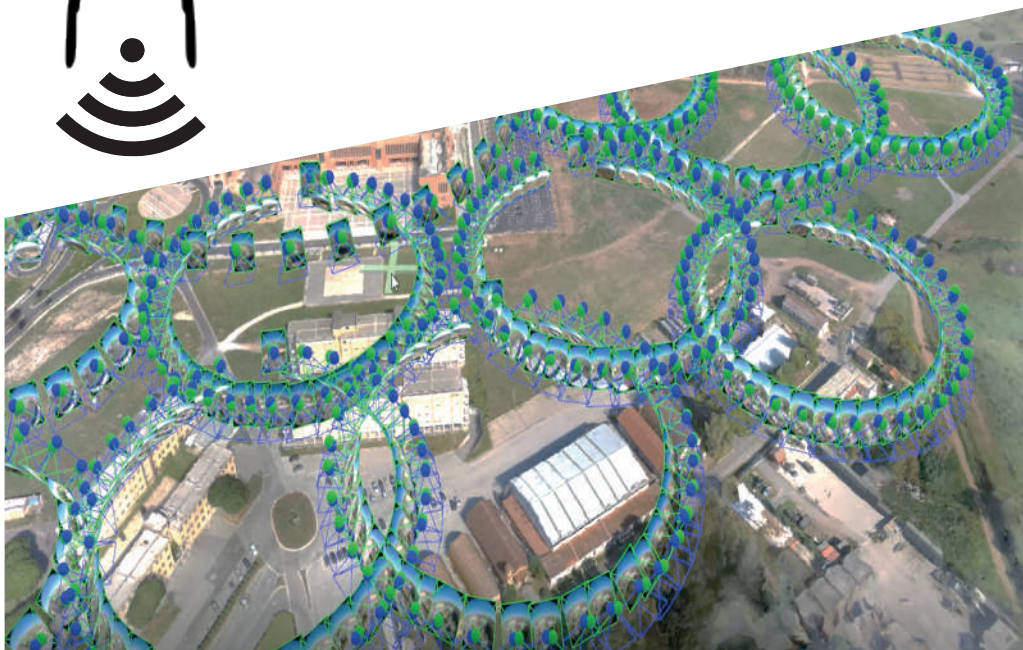
IDENTIFICATION AND INTERCEPTION OF HOSTILE UAVS (ANTI-DRONE SYSTEMS).





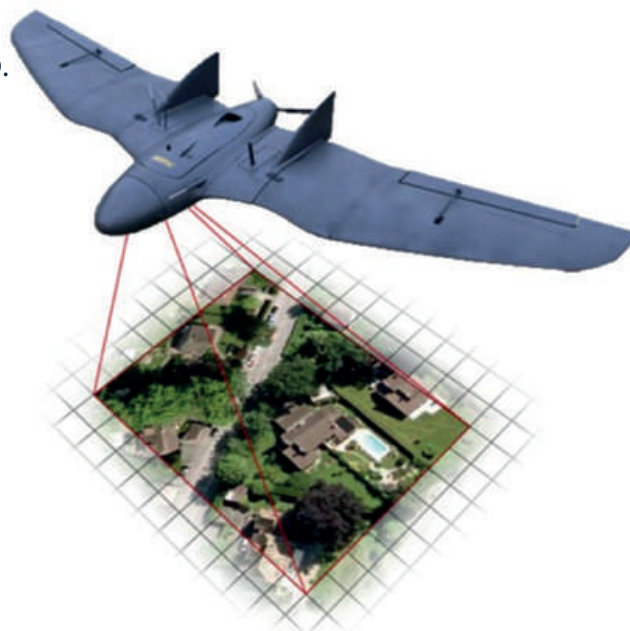
3D Mapping

Capturing aerial images instead of taking measurements on the ground, a job that would take several weeks to finish if done traditionally, can be finished in a few hours with only one drone. Drone mapping which has been adopted by industries all over the world is a safer, faster and more accurate alternative to traditional mapping.



The operational activities that the Flight Department can carry out are as follows:

- Panoramic images.
- Multispectral images.
- Thermal imaging for energy efficiency assessments.
- Proximity photogrammetry and orthophoto.
- Detailed thematic maps.
- 3D DTM and DEM models.
- Architectural findings.
- Map surveys and topographies.
- Archaeological studies.
- Environmental monitoring.
- Failure assessments of natural events (earthquakes, landslides, and floods).
- Exploratory areas that are unworkable or dangerous for the purpose of recovering people and/or situational awareness.
- Monitoring and measurement of contaminants.
- Monitoring of wind, power and hydroelectric plants.
- Monitoring of infrastructure projects (bridges, viaducts, aqueducts).
- Tracking and calculations of quarry volumes.
- Fire Surveillance.



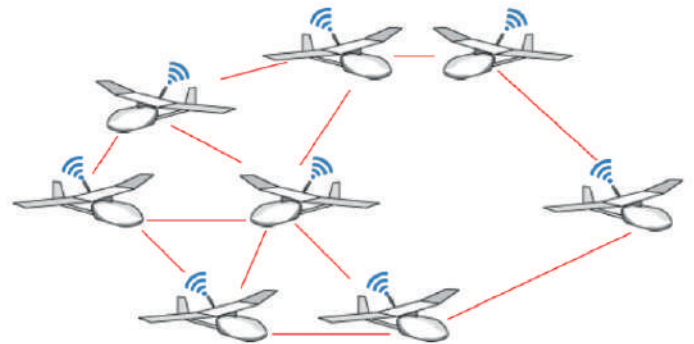


Sistema Anti-Dron

Threats



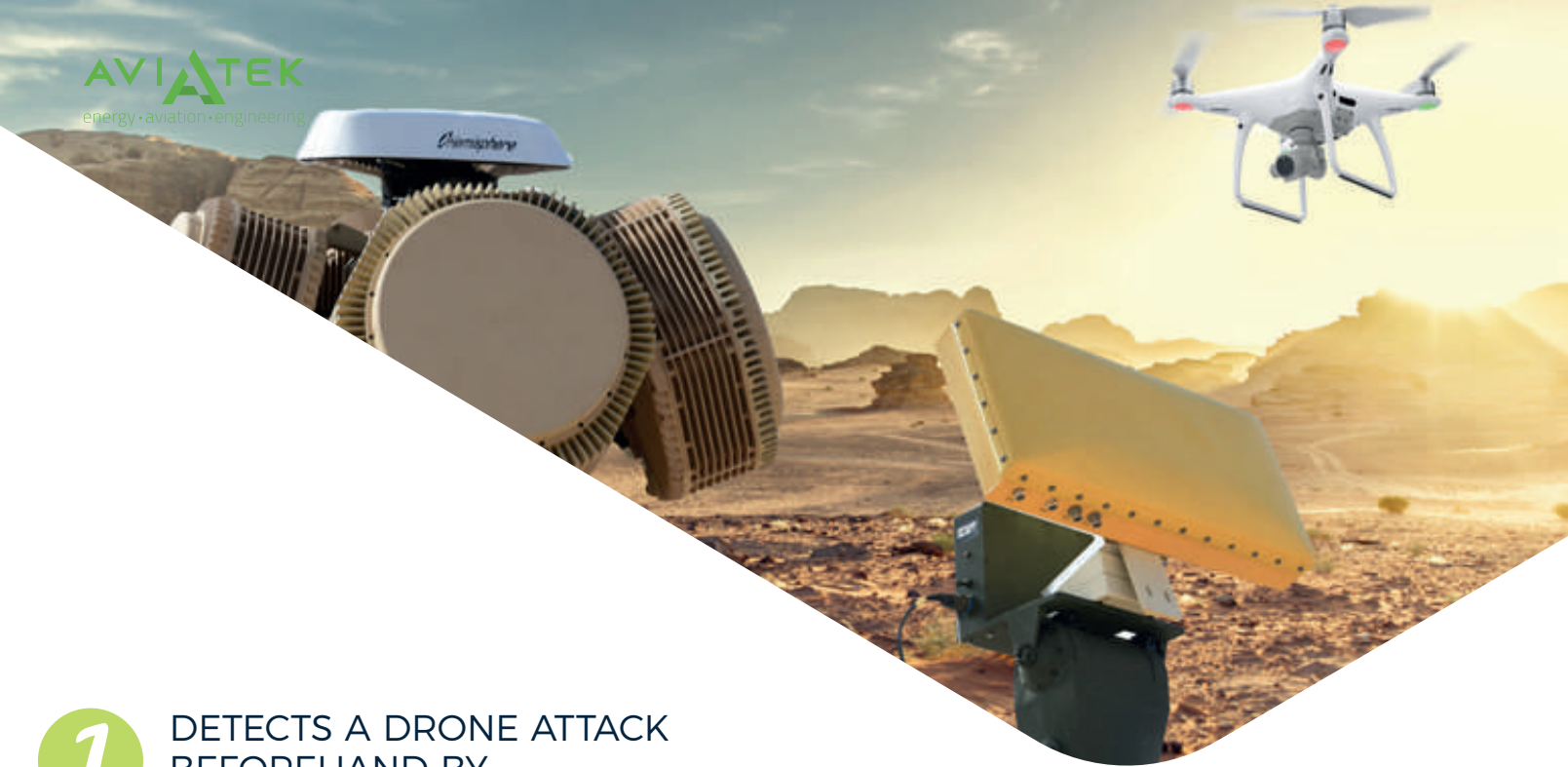
HETEROGENEOUS
THREAT



DRONE SWARM
ATTACK



NO NEED FOR GPS



1 DETECTS A DRONE ATTACK BEFOREHAND BY RECOGNIZING ITS SIGNALS..

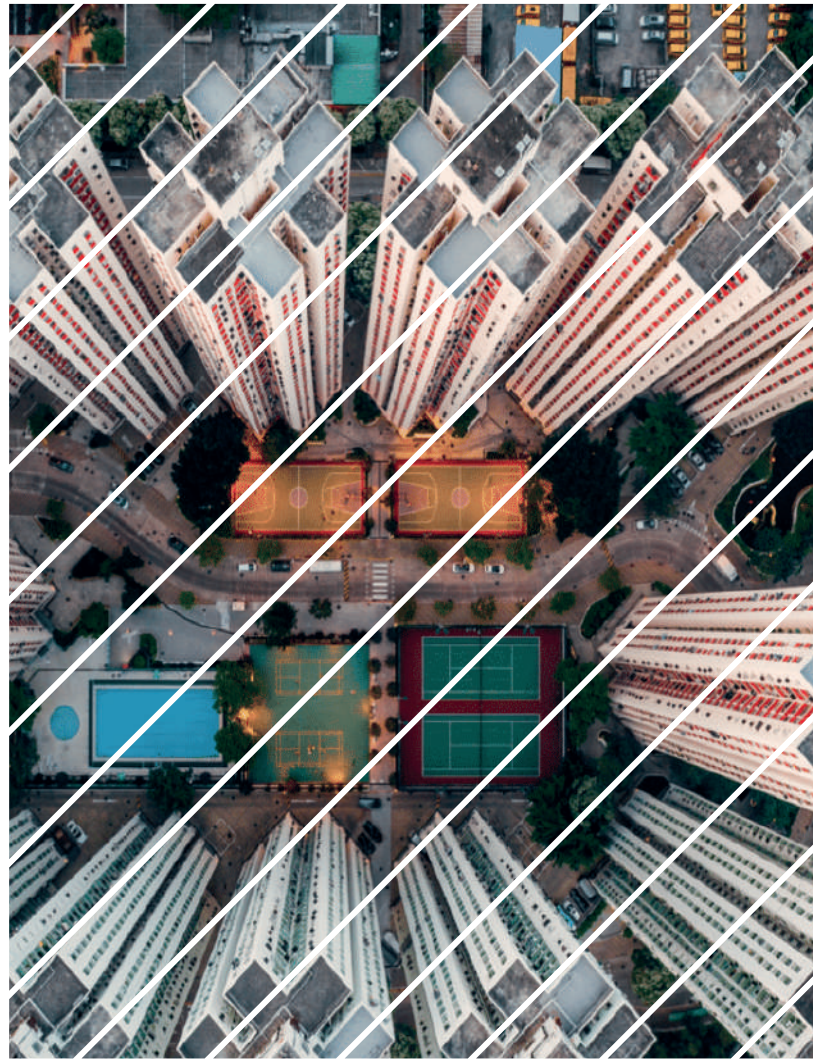
2 IDENTIFIES AND CLASSIFIES THE DRONE TO THEN PLAN THE COUNTERMEASURE.

3 MONITORS AND DETECTS EVENTS/ALERTS IN REAL TIME.

4 EASILY INTEGRATES WITH SECURITY SYSTEMS IN USE.

5 SAVES THE DATA TO BE USED AS DIGITAL EVIDENCE IN LEGAL DISPUTES

6 HELPS THE OPERATOR CARRY OUT THE THREAT ASSESSMENT AND WEAPONS ALLOCATION (TEWA) PROCESS.





PROCESS



ARCHITECTURE





AUDIS



EO/IR CAMERA:

For optical and thermal tracking of hostile UAVs. Each camera is mounted in panoramic tilt and receives a radar designation.

MULTI-TARGET TRACKING:

Through next-generation data fusion algorithms.

RADAR SYSTEM:

Full coverage, day or night, mini detection, small or larger UAVs.



TARGET CLASSIFICATION:

(UAV friends or hostiles) and threat assessment through next-generation machine learning and computer vision algorithms. A swarm of mini UAVs to kill and neutralize threats.

C2 SYSTEM:

Radar designation for the camera; real-time target classification; UAV swarm coordination; Omni directional and directional: blocker for neutralization of soft death threats.



Architecture system



EO/IR & PAN tilt

- High resolution cameras.
- Pan tilt slew-to-cue functionalities.
- Elevation range: $-20^{\circ} / 190^{\circ}$
- Angular accuracy: 0.01°
- Azimuth coverage: 360°
- Max velocity: 45 deg/s



Radar de detección

- Range: 3km for rcs = $0,1m^2$
- resolution Angle $< 3^{\circ}$
- Azimuth cover: 360°
- Angular accuracy $< 3^{\circ}$



Jammer

- Jamming RF
- hantenna pattern
- High bandwidth coverager



Enjambre de UAV

- Cooperative and autonomus fixed wing mini UAVs coordinated by a c2 system.

Overview of anti-drone systems

HARD KILL



All systems that aim to destroy the threat (LASER systems, etc.) or their physical capture (network use).

SOFT KILL

All subsystems that aim to eliminate the threat without it being destroyed like JAMMING and SPOOFING systems.





Countermeasures

Jamming or falsifying the radio connection of a drone or GPS is currently the most practical and effective active countermeasure that will cause the drone to return to its initial position, stay away, land or

STANDARD FEATURES

Multiband interference.
Multi-object interference.
Digital Interference processing.

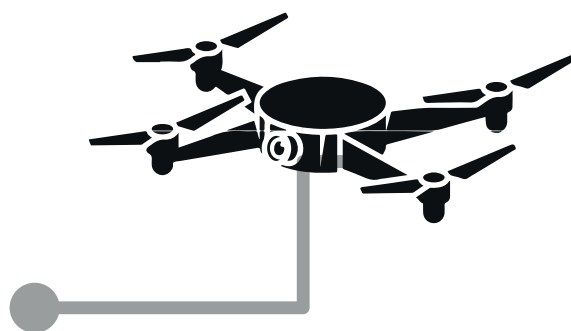
FREQUENCY BANDS

410MHZ-470MHZ

830 MHZ-930 MHZ

2.2.4 GHZ-2.5 GHZ

3.5.725 GHZ-5.850 GHZ



AVIATEK

energy • aviation • engineering



+57 7550996

+1 7862288821



info@aviateksas .com

[www.aviatek .co](http://www.aviatek.co)