




MISTRAL
... Partners in Real Time


MISTRAL HOUND

Mine Detection & Detonation Drones

OVERVIEW

Landmines have become a common threat in virtually every conflict zone worldwide. According to The Landmine Monitor, civilians account for 70 to 85 percent of landmine casualties, causing social, economic, and environmental impact.

The detection and neutralisation of landmines have never been an easy task. The traditional method of using metal detectors to manually scan hazardous areas and demine pose high danger, and put lives at risk. In addition, these methods also take tremendous amount of time and cost.

Mistral HOUND™, is an advanced drone based mine detection and detonation solution for security agencies and armed forces. The Mistral Hound is a combination of highly rugged drones for mapping, detection and detonation of landmines in a defined geographical area. The solution consists of a Mapping Drone and a Detection-cum-Detonation Drone. The drones are designed to survey and map the entire stretch of a defined area, detect landmines, pinpoint their location on a 3D map, and finally neutralize them either by detonating from air or defusing manually.

The Mistral Hound consists of robust-compact drones built with high-tensile carbon fibre to reduce weight and increase efficiency. Integrated with coaxial rotors, the Mistral Hound is capable of long-range flights and can operate in full or semi-autonomous modes.



HIGHLIGHTS



Easy to Deploy
and Use



High-definition
3D Mapping



Detection and
Geo-tagging



Autonomous
Operation



Full HD 1080P, 10x zoom
camera with 3 axis gimbals

Mapping Drone

The Mistral Hound Mapping Drone is a rugged, long-range surveillance drone with a high resolution multi-spectral camera integrated with a 3-axis gimbal to map a defined area. Operators can define the area to be surveyed using the cloud based mapping software on the Ground Control Station (GCS). The drone creates an auto-path and flies over the defined area at a height of up to 100 meters capturing and streaming live video while mapping the area.

Detection-cum-Detonation Drone

The Detection-cum-Detonation Drone is designed for the demining purpose. The drone comes with various mine detection sensors including a camera, metal detector, ground-penetrating radar (GPR) and magnetometer. Operators can choose the sensor based on the type of terrain being scanned and the type of land mines (landmines, UXOs and IEDs) expected there.

The drone is equipped with a stabilization robot (to fasten the sensor) which has a jouncing movement that allows the detector to scan the ground precisely.



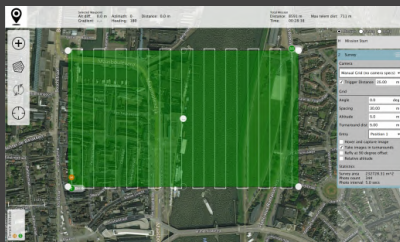
The data from the detection sensors are sent to GCS for geo-tagging the location of the mines. On completion, the detection sensor is replaced with a multi-functional gripping arm for detonation.

Features

- ▶ Carbon fibre airframe
- ▶ Flight time: up to 60 minutes
- ▶ Operational range: 5 KM radius
- ▶ Mapping Altitude 100 meters
- ▶ Detection Altitude: 1 meter
- ▶ Detonation Altitude: 60 - 70 meters
- ▶ Mapping Drone Payload: up to 6 kg
- ▶ Detection Drone Payload: up to 30 kg
- ▶ Payloads: Camera, Metal Detector, Magnetometer, Ground Penetrating Radar
- ▶ Auto mapping & auto-detection of landmines with geotags on the map
- ▶ Flight modes - Autonomous, Semi-Autonomous, Manual
- ▶ Flight/Telemetry data recording
- ▶ Fail Safe Alerts in case of link-loss and low battery
- ▶ Operating temperature: -40 to 60°C

How it Works?

Based on 3D maps created by the Mapping drone, the Detection and Detonation drone systematically scans the mapped area from a height of one meter, to detect and locate the mines. Depending on the data, the mines can be detonated by dropping thermite stick from a height of 60-70 meters.



This ensures that deminers do not access the danger zones directly. They can instead remotely monitor the process using systematic scanning, identification and detonation offered by the Mistral Hound.

Ground Control Station

The Mistral Hound comes with a portable, single display GCS running the software and algorithms to control the drones, robot, and other accessories while mapping, detection and detonation. The GCS comes with a database of thousands of different types of mines for quick identification.

The user can define GPS/RTK coordinates using the GCS, based on which the Mapping Drone generates a pattern to fly and map the area. The GCS allows the users to set the flight mode and view the data sent by the drone. The drone establishes a telemetry connection with GCS, through which user can monitor and adjust the routes in real-time.



ABOUT MISTRAL

Mistral is a technology design and systems engineering company catering to customers in domains of Defense, Homeland Security and Product Engineering all over the world. Mistral is a House of Special Purpose Drones. Our Homeland Security division offers a variety of security and surveillance solutions for Command and Control, Mobile C4ISR, Drone Detection and Neutralizing, Video Analytics, Tactical Communication; designed for Special Forces, Police and Para-military for Emergency Response Management, Disaster Management and Border Surveillance.

Since 1997, Mistral has been aiding governments to upgrade and modernize Homeland Security systems with the latest technologies and equipment. Our Homeland Security solutions provide information in real-time, enabling quick decision making.



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