



NIGHTINGALE  
SECURITY®

# ROBOTIC AERIAL SECURITY



# WHAT IS ROBOTIC AERIAL SECURITY?

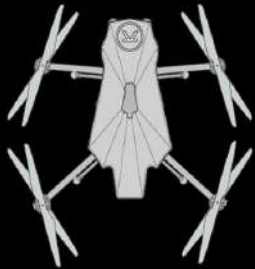
This video demonstrates some typical Robotic Aerial Security missions at a customer location.



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# COMPONENTS OF THE BLACKBIRD (RAS) PLATFORM



**DRONE**



**BASE-STATION**



**C4AI SOFTWARE**

# CONCEPT OF OPERATIONS

## Automated Patrols

Scheduled missions at a specific time and route to perform repetitive patrols. It is as easy as creating a calendar event.

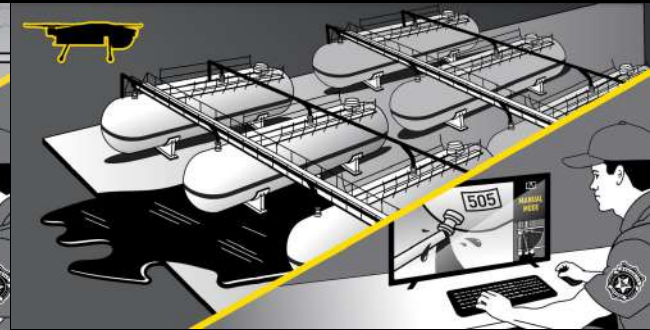
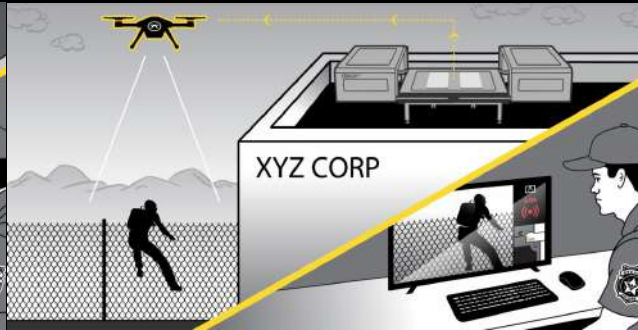
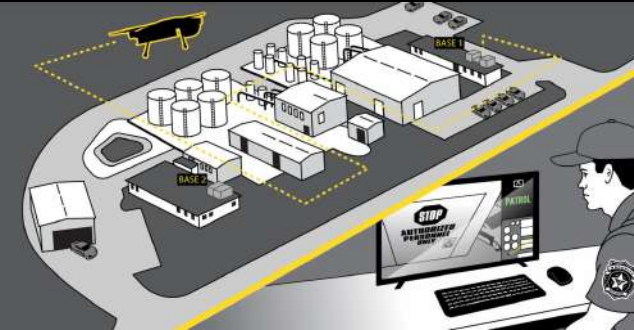
## Rapid Response

Flying is the fastest way to get to an incident. We integrate with perimeter sensors to automatically dispatch our drone to incident location.



## Aerial Reconnaissance

It's much easier and cost effective to cover a large area efficiently from the air. Have a camera on target anywhere, anytime at your facility.



# BENEFITS AND KEY FEATURES OF THE RAS PLATFORM

## Enhanced Security

- Live video feeds to security operation
- Video record of incidents with time stamp
- Real time threat management with managed risk
- 24/7 consistent security preparedness

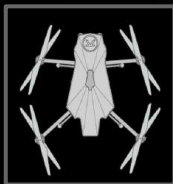


**C4AI Software**

## Significantly Increased Efficiency

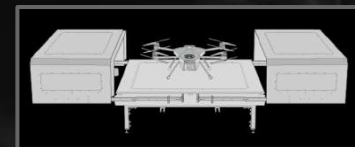
- Maximizes efficiency of existing security guards
- Fully autonomous mission defined operations
- Subscription based model with no Capex investment, technical obsolescence

Live command and control, edge based machine intelligence for autonomous fleet operations



**UAV**

Specialized intelligent UAV for security.  
Onboard AI can respond to threats in real time. All video streams are encrypted to maximize cyber security.



**Base-Station**

Enables complete autonomous workflow, 24/7 mission readiness and automated charging. Data is more secure when it's stored at "the edge", inside the base-station.

# OUR MODEL | ROBOT AS A SERVICE - (RaaS)



RaaS is a service solution that includes the technology platform, maintenance, repair and upgrade (MRU).

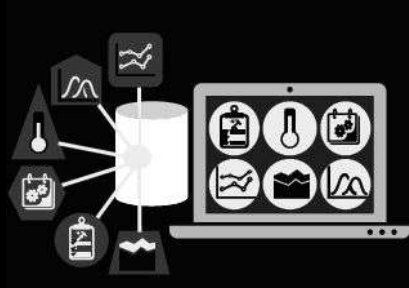
Purpose of MRU is to ensure the technology up-to-date and minimize customer headaches.

# MAINTENANCE, REPAIR, UPGRADE (MRU)



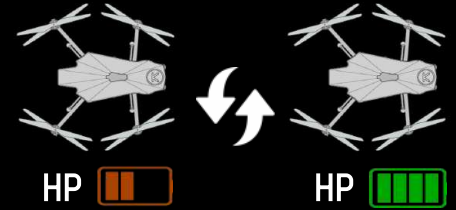
## QUALITY DEPLOYMENT

When we deploy a system we ensure that every component is properly functioning and in a position to live out its entire expected life.



## CONSTANT MONITORING

Nightingale tracks diagnostic and telemetry data and analyse them via **Robotic Management System (RMS)** to enhance system uptime.



## PROACTIVE MAINTENANCE

We monitor system health of our robots and utilize the data to optimize MRU operations and over the air (OTA) software updates.

The **MRU** service is meant to take away the hassle of ongoing drone upkeep. Apart from automating and simplifying routine maintenance, it also help protect customers from obsolescence by ensuring they always have access to the latest and greatest technology NS has to offer.

# INTELLIGENT FLEET MANAGEMENT SOFTWARE

## Patented API

Provides easy integration with other software (Avigilon) or IOTs.

## Intelligent path-planning (IPP)

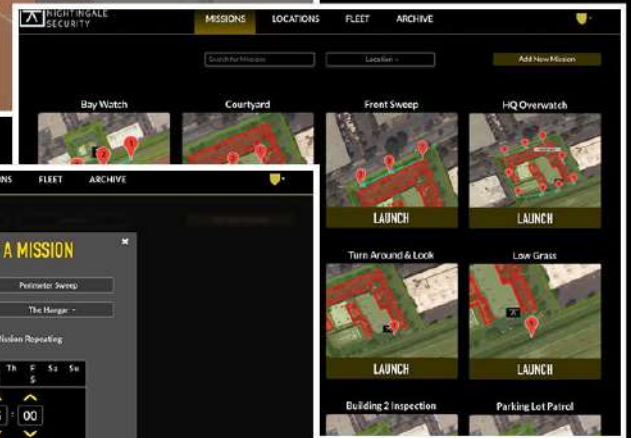
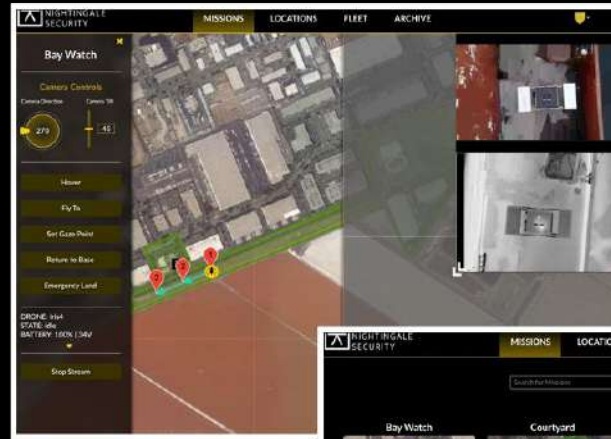
Ensures safe navigation.

## Robot to Robot communication

Enables fleet cooperation.

## Autonomous logistics ("AL")

Global fleet monitoring for optimized maintenance.



# SECURITY REQUIRES 24x7 READINESS

It requires an on-site, multi-weather, automated, and integrated solution.

## OPERATIONAL DURING INCLEMENT WEATHER



## COLD WEATHER DEPLOYMENT



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# HOW DO WE DEPLOY?

# AIRSPACE ASSESSMENT

## MAKING SURE IT'S SAFE & LEGAL TO FLY

As part of the deployment process, Nightingale's deployment team will evaluate the customer location to ensure it's compliant with the FAA for RAS operations.

Safe and legal flights = Successful mission.



# SYSTEM INTEGRATION

## INTEROPERABILITY & EFFICIENCY

Interoperability with customer VMS and PSIM through software integration.

Integrate with existing alarms or sensors to automatically dispatch a drone to any triggered events. Maximizing the efficiency and usefulness of our solution.



# 3D MAPPING OF OPERATIONAL AIRSPACE



## LOCATION AWARENESS

Nightingale will scan the operational area to create a 3D map. The map will be used to aid mission planning and autonomous navigation.

It also enables the creation of no-flight zones on the map.



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# INSTALLATION | COMM, BASE & DRONE

## REMOTE OR ON-SITE DEPLOYMENT

“IF YOU WANT TO DO THE JOB RIGHT, YOU HAVE TO COOPERATE WITH THE CUSTOMER.”

Our deployment team will work with the customer to deploy the system remotely or on-site. We have a dedicated deployment team with years of experience and wide range of environmental conditions. Our deployment team will be there every step of the way. All deployment includes operational training for our customers.



# OPERATIONAL TRAINING & MISSION PLANNING

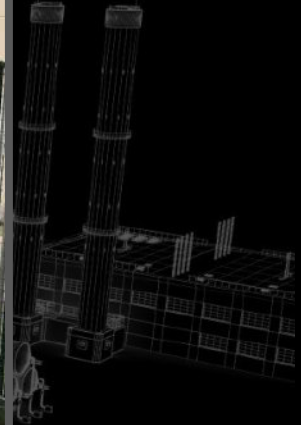


## VICTORY IS PREPARATION

At Nightingale, we believe that being ready requires training and practice. No deployment is complete without training the customer on the use of our software and basic maintenance procedures.

We also work with customers to create initial missions, as well as test-fly those missions with the customer prior to handing over the system.

# DEPLOYMENT COMPLETE!



# ADDITIONAL USE CASES

**Asset Management:** The Blackbird can scan the data center and identify any assets needing maintenance or repair.

**Inventory Management:** The drone can be used to scan the data center and automatically update inventory records.

**Temperature Monitoring:** The Blackbird's infrared cameras can detect hotspots and elevated temperature areas, indicating potential cooling systems issues.

**Power Distribution Analysis:** The Blackbird can scan the facility and detect any issues with power distribution, such as overloaded circuits.

**Fire Detection:** The Blackbird is equipped with cameras and AI algorithms to detect signs of smoke or fire at the facility.

**Monitoring the physical structure:** The Blackbird can be used to inspect the physical structure of the data center, looking for signs of wear and tear or damage that could lead to failure.

**Identify and locate environmental hazards:** The Blackbird can identify and find ecological hazards such as water leaks, gas leaks, or other potential hazards.

**Routine maintenance:** The Blackbird can be used to perform routine maintenance tasks, such as cleaning and dusting, without the need for human intervention.

# VOLUMETRIC ANALYSIS & 3D MAPPING



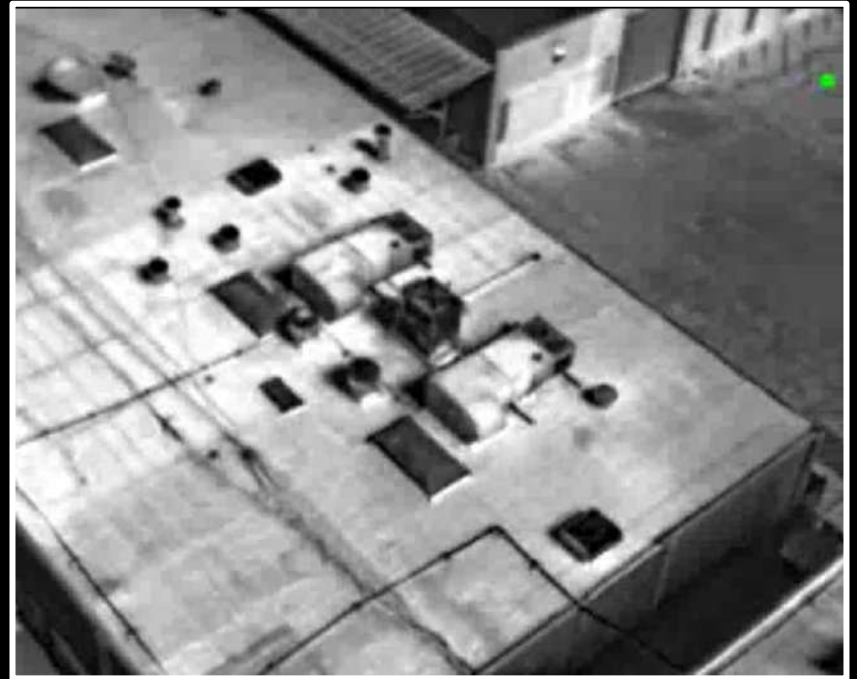
We were able to map the salt pile above with more accuracy, in a shorter period of time, and for less cost than the previous manual methods. We can do volumetric measurements over any large objects at the facility.

# ON-TIME MAP UPDATES



Nightingale BLACKBIRD can create 2D maps efficiently and have it integrated into google maps via google maps API. The map will only be visible to the customer. Our drones can update the as often as it can fly.

# ROOFTOP INSPECTION



Inspect for rooftop anomaly using FLIR thermal camera



**WANT TO KNOW MORE?**

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