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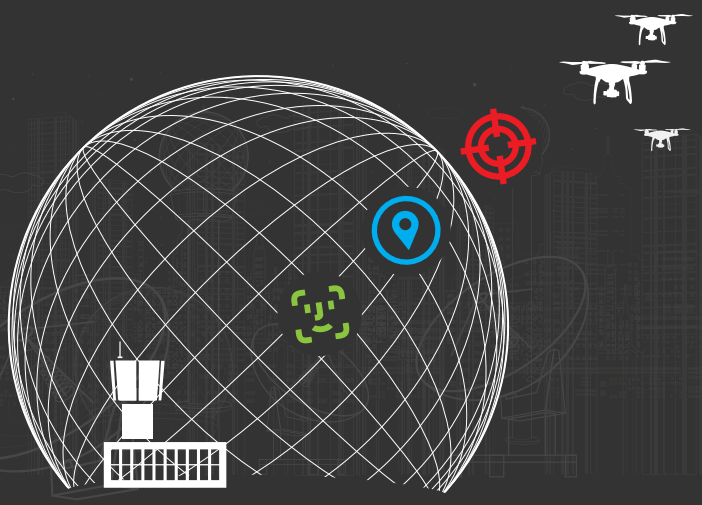
DroneNet Fixed Installation

Counter Drone Solution for Strategic Infrastructures

Multi-Layered Counter Drone Defense

Netline's DroneNet platform offers a multi-layered, counter drone solution for Detection, Localization and Mitigation of hostile drones trying to intrude critical airspace. The fixed Installation DroneNet is designed to provide the end-user with real-time situational awareness, protecting critical infrastructures .

The system is based on a modular architecture, with each module being a self-contained element, for quick field repair and maintenance and facilitating frequencies update of future threats. The modules are installed in outdoor cabinets, designed to work 24/7 in harsh weather conditions meeting the strictest environmental standards.



System Dynamics International is the Authorized US Reseller of the Netline *DroneNet* Counter UAS line of products. Contact us for more information or to arrange a demonstration.

Authorized US Reseller

SDI System Dynamics International

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Detection & Identification

Sensing Segment - The sensing segment is based on a network of wide band sensors deployed around the secured facility. The deployment architecture is determined according to a site inspection around the facility, identifying the optimal installation locations.

Netline's detection techniques are based on continuous analysis of time & frequency domains by RF sensors. Preloaded spectral signatures of commercially available drones are used as the system's database. The DroneNet searches for activity patterns corresponding to the communication signatures of the stored drones. Once a match is found the C&C center will receive an alert, notifying a drone has been detected, as well as its type. The DroneNet's low rate of false alarms of is achieved by using an SDR SIGINT receiver, capable of detecting drones based on their spectral signature, being completely agnostic to the drone's protocol data (which might be encrypted) resulting in a fast-evolving signatures database.

Localization

Direction-Finding (DF) Segment - TPrecise location of the drone is acquired by deploying a network of overlapping & complementary coverage DF sensors taking in consideration the likely threat axes.

Drones will be detected and located immediately upon attempting to intrude the airspace set at a safe distance (few kilometers radius) from the target, linked back to a central C&C allowing to warn-off the control center and respond appropriately.
The accuracy of the estimated location is determined by the number of deployed sensors and the deployment topology.

Mitigation

Jamming Segment - Upon initiation of the mitigation phase the system blocks the communication between the drone and its operator on ISM bands, as well as the GPS signal used by the drone. Netline's DroneNet jammer is composed of 5 bands covering all potential drone frequencies. Each band addresses a different communication channel used by the drone for a different purpose;

- Disabling the drone's control & telemetry channel, resulting in loss of control over the drone
- Blocking the video downlink transmission
- Jamming the GPS signal, disabling the drone's navigation & stabilization capabilities

The system's modular design enables future upgrade and insertion of additional frequencies and threats.

Mission Management

C&C Segment

Gathering real-time tracking data from a multi-sensor network requires, in most cases, linking back the gathered data through a wide bandwidth fiber-optic communication infrastructure.

The DroneNet can operate even in scenarios when high-bandwidth optical fiber infrastructure is not available. In such cases, Netline's DroneNet can operate over cellular networks (assuming sufficient coverage is available) utilizing data reduction techniques, concentrating on reducing the volume of the data communicated within the network. The collected data from each DF sensor is transmitted over the cellular network to the central C&C.

The DroneNet can be integrated into any third-party C4I system, utilizing its core capabilities on the one hand and maintaining the end-user's interface on the other hand, facilitating the integration of DroneNet within a wider C&C application.

Main Features

- Jamming Bands; 433MHz, 900MHz, GPS, 2.4GHz, 5.8GHz
- Detection Bands; 433MHz, 900MHz, 2.4GHz, 5.8GHz
- DF Bands; 2.4GHz, 5.8GHz
- Passive detection and localization - not subjected to FCC/FAA regulations
- 3D Directional Finding (Azimuth +Elevation)
- Does not require Line of Sight
- Very low Mean Time to Repair (MTTR), no periodic maintenance required
- Based on an SDR platform, enabling DDS / AWG signal generation
- Operates in harsh environmental conditions