Drone Dock

Robotic Drone Docking Station for Automated Perimeter Protection

Drone Dock is an automated solution for perimeter protection using drones. The system is designed to be fully unattended and deployed in remote or hazardous areas. The system's key feature is the safe execution of automated flight using the built-in flight control system, which includes collision resolution, geofencing, and system status monitoring. An essential system component is a ground robotic station performing a robotic replacement of the drone's batteries. The system is designed for two basic modes of operation: 24/7 surveillance or as a first response unit.

Key Features

- Fully automated drone operation system
- Surveillance of remote and inaccessible areas
- Near-continuous operation achieved by robotic battery replacement
- Static installation or mobile version for rapid deployment
- System of first intervention within operational distance
- Seamless integration with existing security systems
- Highly secure access and advanced logging
- Backup power supply and protection against all weather influences

UAS platform

- Antijamming and antispoofing GNSS navigation
- Compatibility with various radios (Doodle Labs, Persistent Systems, Silvus Technologies)
- Electro-optical and thermal camera mounted on stabilized gimbal
- Optional external localization system
- Automated, semi-automated, or remote-control operation modes
- Optional onboard image processing and AI-based autonomy
- Optional add-on sensors or EW equipment

Ground segment

- ✧ Self-reliant control of the whole system
- ✧ Hangar for off-limit weather conditions, air-conditioning, defrosting
- ✧ Radio modem with omnidirectional or tracking antenna
- ✧ Optional integration of third-party perimeter protection sensors
- ✧ Weather station for detection of off-limit weather conditions
- ✧ ADS-B receiver for detection of incoming air traffic
- ✧ Powerful computing hub for processing data at the deployment site

Customization

- ✧ Special equipment for operation in extreme climate conditions
- ✧ Independent power supply from combustion generator
- ✧ Global satellite internet connection
- ✧ Specific customization based on customer's requirements

The drone can be equipped with various EO/IR payloads and additional onboard electronics, like an e-ident device, ADS-B transponder, or antijamming/antispoofing modules for operation in a harsh environment.

The drone docking station provides battery swap and recharge capabilities and can be deployed in a mobile version for ad-hoc/short-term missions or used as a static system for long-term operation.