HuntAIR-X

Autonomous UAS swarms for terrain dominance, search, detection, automatic target recognition and laser designation

Elbit Systems™
C4I and Cyber

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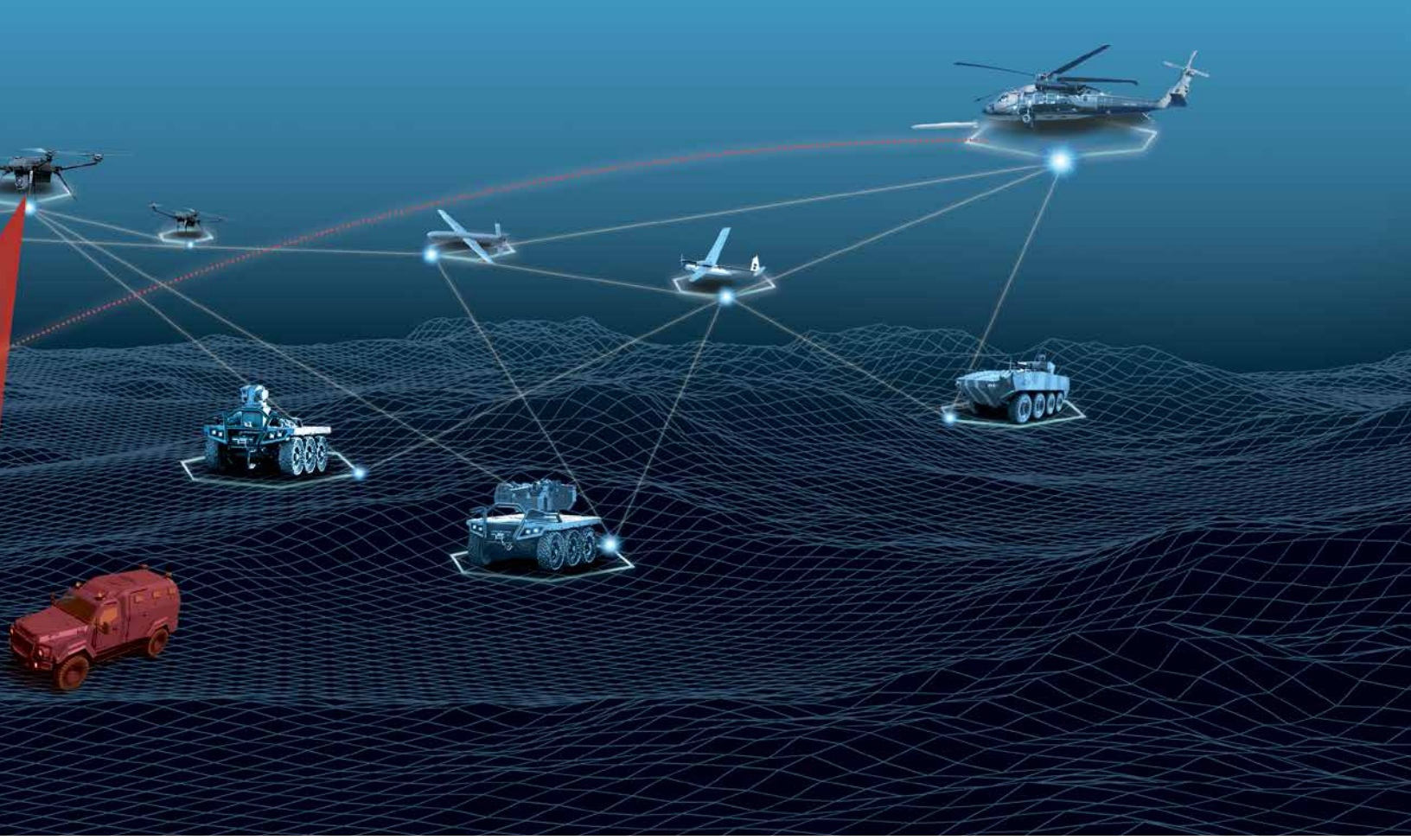
The multi-domain battlefield has become increasingly complex, requiring sophisticated technology solutions. Integration of an advanced network of UAS swarms, ISR payloads and communication systems to detect enemy threats, shorten the sensor-to-shooter cycle and establish terrain dominance, provides a strategic advantage and plays a critical role in mission success.

Drones play a significant role in the ability to identify threats, searching areas of interest to enable early detection and efficient gathering of intelligence data. Operating autonomous swarm missions in complex warfare environments requires integrated flight control and payload management with the ability to process vast amounts of real-time intelligence data including video, maps and target detection from multiple sensors, from takeoff to mission completion and circle of fire closure.

System Overview

An integrated solution for mission planning, execution and monitoring, HuntAIR-X enables control of autonomous UAS swarms with a variety of advanced payloads. Autonomous management capabilities enable day and night operations in GNSS-denied environments, with the ability to perform a sustained overwatch mission in a defined area of interest, detect and designate targets and accurately map threats in real-time.

Area of interest coverage: The system is designed to cover an area of 1 sq. km (0.4 sq. miles). The area can be easily extended by adding additional platforms or by changing the search pattern and intervals. Area of interest can be up to 15km from the swarm takeoff and landing zone.



HuntAIR-X Platoon Kit

Drones: Advanced UAS swarms with various EO/IR payloads for area of interest coverage, detection, classification, automatic target tracking (ATR) and target acquisition.

4 observer tactical UAS – Day/night EO, GNSS-denied navigation and autonomous platform management with AI capabilities. Optional: 8 drones to allow hot-swap capability for maintaining a sustained mission.

1 target acquisition UAS – EO/IR with laser designator, GNSS-denied navigation and autonomous platform management with AI capabilities. Optional: second drone to allow hot-swap capability for maintaining a sustained mission.

Dominion-X Management System: A unique all-in-one system for autonomous mission planning, execution, and monitoring with advanced capabilities for optimal planning of navigation routes, task performance, and asset management. The system automatically calculates the optimal number of UAS for maximum coverage and optimal search patterns.

Dominion-X enables control and coordination of an unlimited number of autonomous drones in a swarm, displaying all system components on a tactical tablet including day/night video, detections, map location, swarm status and mission status. The system plans the autonomous missions based on user inputs, including mission type, area of interest, locations of takeoff, landing, and "no-fly" zones, duration and hot-swap planning when needed.

An embedded AI-based Decision Management System (DMS) allows UAS to perform the autonomous mission including navigation to the point of interest, controlling the payload and collaborating with other swarm members.

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Main Applications

- Terrain dominance and sustained overwatch
- Enemy detection and laser designation
- Active tracking
- Patrol mission
- Mortar fire launch detection
- Rapid target recognition
- Real-time 3D mapping
- Autonomous seismic sensors aerial dispensing

Key Features

- Autonomous mission management
- AI-based decision management system (DMS)
- Open architecture enables interface to C⁴I and BMS systems
- Customizable: User-defined missions and operational use cases
- Battle-tested: In operational use worldwide
- Hot-swappable multi-drone swarm
- Integrated collision avoidance systems
- Operates in GNSS-denied environment
- Laser Target Designation (LTD)

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