C-UAS
Counter Unmanned Aerial Systems

CHESS DYNAMICS

A **COHORT PLC** COMPANY

COUNTER UNMANNED AERIAL SYSTEMS (C-UAS)

The threat from UAVs has increased exponentially throughout the world – whether on land or at sea – in military and civilian scenarios. Chess' C-UAS solutions will assist the enforcement of exclusion zones, to protect critical assets from unwanted surveillance, and attacks from hostile UAVs.

The Counter Unmanned Aerial Systems (C-UAS) from Chess Dynamics are designed to uncover and neutralise Unmanned Aerial Vehicles (UAVs) engaged in hostile airborne surveillance and malicious activity. They use a combination of electronic-scanning radars, target detection, electro-optical sensors, and directional RF inhibition to provide 360° coverage and situational awareness. The system is a smart-sensor and effector package which is equipped with advanced AI capabilities for target classification and identification.
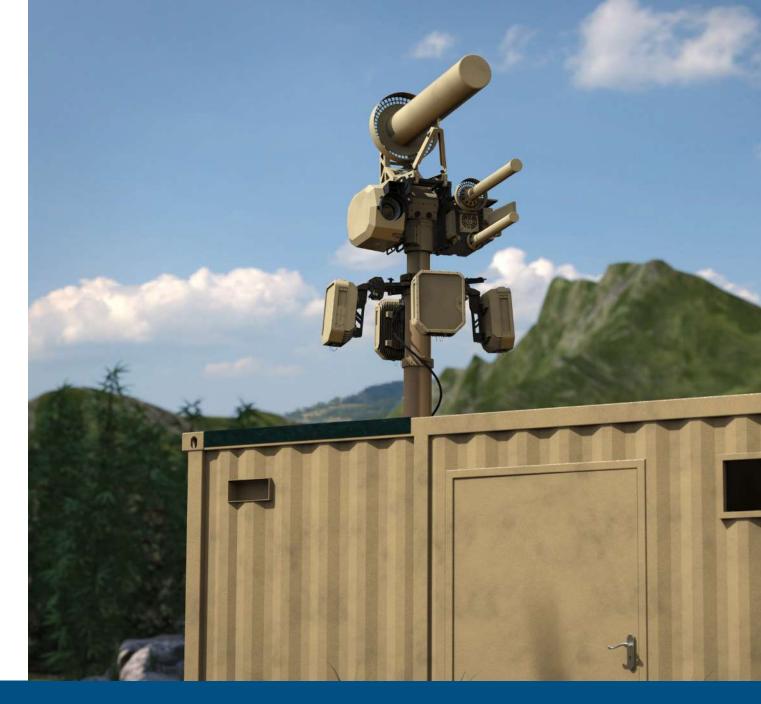
The systems from Chess maximise multiple sensors and fully integrate them into a Combat Management System (CMS). The CMS incorporates automatic alerts, identification, and tracking which keep the human operator in the loop. This allows a reduced manning profile, thus saving cost and time. The CMS is also sensor agnostic, which allows Chess to build a bespoke system best suited to the user environment. All sensors are overlaid onto a unified map for situational awareness.

The Chess C-UAS solutions can be installed and operated from fixed locations and from mobile platforms, and this offers both flexibility and extended protection ranges. The C-UAS systems are essential components of full spectrum air defence. They can be used in remote or urban areas, preventing the use of UAVs for terrorist attacks, espionage, or other malicious activities against sites of critical infrastructure.

Key Features

- Tailored smart-sensor and effector package capable of remotely detecting small UAVs

- On-vehicle role change options

- Edge processing sensor fusion

- 4D radar, acoustic detection and R/F/D/F

- Disruption/inhibition delivers operational effect

- Software defined intelligent RF inhibition

- Long-range colour camera and a high sensitivity Thermal Imager (TI)

- Automatic target classification

- High definition sensors

- Digital architecture

- Robust rugged design

- Sensor fusion

- AI driven, human controlled operation

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Chess Sensor Fusion

Chess uses a layered approach to optimise system performance. No one layer provides the ultimate solution, but system sensor fusions ensure complete performance.

The chart to the right demonstrates how the individual functions of C-UAS surveillance vary in effitiveness depending on the scenario, with green representing high effectiveness, amber denoting average effectiveness, and red showing areas of poor effectiveness. The chart illustrates how the layered, multi-sensor approach adopted by Chess guarantees strong systems performance across the board.

	Detection Range	Angular Accuracy	Range/Velocity Accuracy	Tracking	Autonomous (No RF-Link)	Weather/ Environmental	Classification	Hovering Drone	Robustness against defeat	Passive Detection
EO/IR Camera	Amber	Green	Red	Green	Green	Red	Green	Green	Green	Green
RF Direction Finding	Amber	Amber	Amber	Amber	Red	Green	Amber	Green	Red	Green
Acoustics	Red	Amber	Red	Amber	Green	Amber	Amber	Green	Amber	Green
RF Radio ID	Green	Red	Red	Red	Red	Green	Green	Green	Red	Green
Radar	Green	Amber	Green	Green	Green	Green	Amber	Amber	Green	Red
RF Packet Sniff & Spoofing	Amber	Amber	Green	Green	Red	Green	Green	Green	Red	Green
Multi-Sensor	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green

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