

Taking Control of the Drone Threat

The Drone Threat

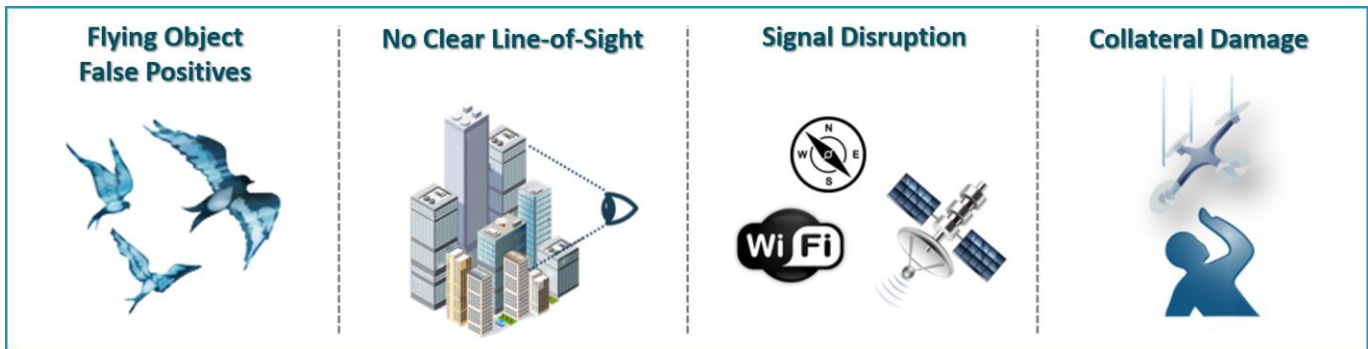
Drones are becoming smaller, faster, harder to detect, more durable, and cheaper, while covering a wider range across long distances. Commercial drones are turning into a greater security risk for many situations, scenarios, and environments, including military, law enforcement, airports, critical infrastructure and strategic facilities, prisons, government sites, VIP protection and more.

Recent high-profile incidents involving rogue or dangerous drone activity, such as unauthorized drones at airports, VIP assassination attempts and terrorist use of drones to drop explosives, all point to the need for a heightened sense of urgency around this threat.

The Counter-Drone Challenge in Sensitive Environments

Urban and sensitive environments require safe and effective anti-drone defense, considering severe detection difficulties, potential collateral damage, and the need to avoid extreme disruption of civil communication signals. Signals are subjected to interference from tall buildings and other urban elements; and may be unable to distinguish friend versus foe drones.

Optical systems have limited Line-of-Sight and are sensitive to weather and visibility. RF/GPS jamming systems can cause serious communications interference and peripheral damage, disabling GPS navigation and control systems and disrupting Wi-Fi and cellular networks.



D-Fend Solutions Moves Beyond c-UAS Convention to Better Achieve Continuity:

- Overcomes challenges of traditional c-UAS technology in sensitive environments, including high risks of collateral damage, and interference and disturbance to communications, commerce, transportation, and continuity of everyday life.
- Provides an alternative and complementary measure in the varied mix of counter-drone measures,
- Rapid deploys in certain scenarios as the optimal solution for various environments and situations.

EnforceAir Takes Control of the Drone and Takes Control of the Threat

Key Benefits and Advantages

- Advanced autonomous system
- Automatically and passively detects, locates, and identifies rogue drones
- IFF distinguishes between authorized and unauthorized drones
- Unique capability to mitigate risk by TAKING CONTROL over drones
- Lands rogue drones safely at a predefined safe zone
- Employs non-jamming, non-kinetic technology which does not require line-of-sight
- Wide variety of deployment configurations and complete operational flexibility
- End-to-end c-UAS capabilities in any scenario or environment
- Open API for integration with Command & Control systems
- Integration with USAF Medusa SoS and AFRL ATAK app

D-Fend Solutions’ Key Counter-Drone Core Concepts



CONTROL

The best way to **control** the drone threat and ensure **continuity** is to **take control of the drone** itself



SAFETY

A **safe landing** or fending off of the rogue drone is the best possible outcome for **safe airspace and continuity**



FOCUS

Counter-drone measures must **focus on the real risk, the most dangerous drones**, and employ drone risk analysis, assessment, and prioritization



FUTURE

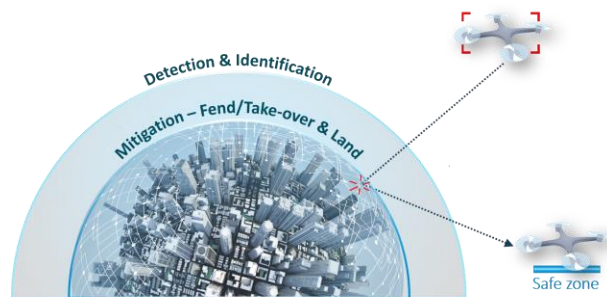
The constantly changing and increasingly complex drone threat requires foreseeing the drone future and **always staying a drone threat ahead.**

EnforceAir – The Ultimate C-UAS Solution Designed for Sensitive Environments

EnforceAir C-UAS is an advanced autonomous system that automatically and passively detects, locates and identifies rogue drones, with capability to mitigate risk by TAKING CONTROL over them and landing them safely at a predefined safe zone, employing a non-jamming, non-kinetic technology which does not require line-of-sight. EnforceAir’s comes in a wide variety of deployment configurations to enable complete operational flexibility and provide end-to-end c-UAS capabilities in any scenario or environment, whether urban or rural, and in dense or open terrain.

EnforceAir passively and continuously scans and detects unique communication signals used by commercial drones. Once detected, EnforceAir extracts the drone identifiers for Identification Friend or Foe (IFF) and decodes the telemetry signal to extract the drone position with GPS accuracy, as well as its take-off position near the pilot in real-time.

During the mitigation process, the drone user pilot loses all control of the drone, including video and telemetry information, and cannot regain control over the drone throughout the entire process. EnforceAir is a non-jamming solution which transmits a precise and short signal that takes control over the rogue drone without interfering with other drones and communication signals.



Main Capabilities & Benefits throughout the Drone Incident Lifecycle



Detect & Alert:

Alert when a drone is detected according to its unique communication signal

- Passive
- Long distance
- No need for clear Line of Sight
- Designed to operate in noisy sensitive environments



Locate & Track:

Real time location tracking by extracting the drone's GPS positions

- Passive
- Accurate
- No need for clear line-of-sight



Identify:

Extraction of the drone's unique communication identifier ("Tail Number")

- Passive
- Selective – distinguishes drones in the area between authorized and unauthorized (IFF)



Data Extraction:

Extraction of the drone's take-off position (home point) with GPS accuracy while in midair

- Passive
- Indication of drone pilot's position at time of take-off



Fend-Off:

Disconnecting the signal of the drone operator's remote control, causing it to fly back to its take-off position according to the drone's original configuration.

- Active-RF
- No reprogramming or data intervention



Take Control & Land:

Setting a new flight path for safe landing of the drone to a pre-defined position

- Active-RF
- Defines EXACT behavior of drone when controlled by the system
- Defines SAFE landing position



Operational Flexibility

The EnforceAir provides the ultimate in operational flexibility, as its core elements can be easily transferred, mounted, and configured within a matter of minutes, providing the means necessary to go anywhere at any time.

The EnforceAir Deployment Kits:

- High-Angle Tactical Kit: Exceptional high-angle coverage for a wide variety of scenarios, conditions, and terrain types, with rapid and easy setup.
- Covert Vehicle Kit: For mobile scenarios, easily mounted and transferred between different vehicles within minutes.
- Stationary kit: Ideal for static 24/7 deployment settings. Easily secured onto existing pole and designed to withstand extreme environmental conditions.
- Ground Level/Military Tactical Kit: Supporting ground forces through defense scenarios, with a 360° azimuth coverage.
- Military Vehicle Kit: An optional dual-use setup kit for mobile and ad-hoc static deployments that can be combined with the ground level military tactical deployment kit.



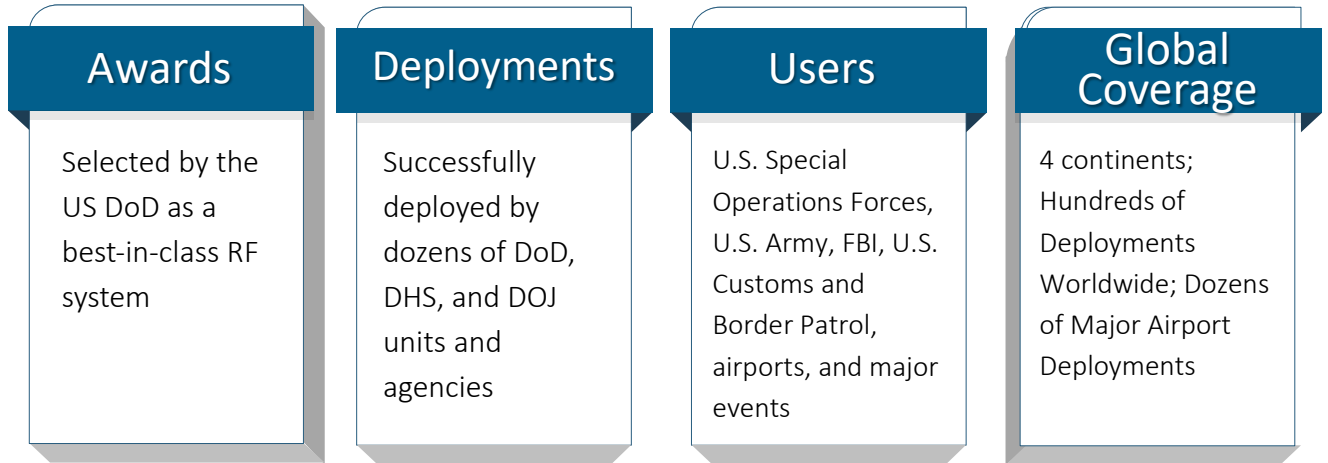
Additional Benefits

- **Advanced proprietary protocols**

EnforceAir supports the most advanced long-range drones, and commercial and proprietary radio (DIY) protocols, with unique ability to reprogram them to fly a new route and land them controllably and securely in a pre-defined safe zone.
- **High Performance**
 - Ability to handle multiple drones simultaneously
 - 360° perimeter security with radius of up to 3km (1.8 miles) - using omni antennas
 - Support for both manual and pre-configured autopilot flight modes
- **Easy Deployment and Operation**
 - Autonomous
 - Configurable mitigation methods, fend-off or takeover control & land
 - Stationary and/or mobile deployments operations with quick and easy setup
 - Low power and small footprint
- **Future Ready**
 - Designed to handle all standard and proprietary radio technologies used by commercial drones
 - Continuous software updates to enable up-to-date response to new drone models and DIY radio components

Traction and Validation: Tested and Selected by the Top Tier

Actively helping to enhance national security against hostile commercial drones



Representative Customers



About D-Fend Solutions

Founded in 2017, D-Fend Solutions is a C-UAS market leader combining superior technologies with top tier expertise by some of the best minds in the fields of defense, electronic warfare, and cybersecurity. D-Fend delivers unique c-UAS capabilities that enables governments, defense forces and law enforcement agencies to safely neutralize the threat of rouge commercial drones in the most complex and sensitive environments and scenarios.

EnforceAir, D-Fend's c-UAS solution was selected by the US DoD as a best-in-class RF system and is successfully deployed and used by dozens of DoD, DHS, and DOJ units and agencies, helping to enhance US national security against hostile commercial drones. Among the agencies currently operating D-Fend's EnforceAir are U.S. Special Operations Forces, U.S. Army, FBI, U.S. Customs and Border Patrol, as well as major international airports.

For further information, visit www.d-fendsolutions.com or contact us at Sales@D-FendSolutions.com.