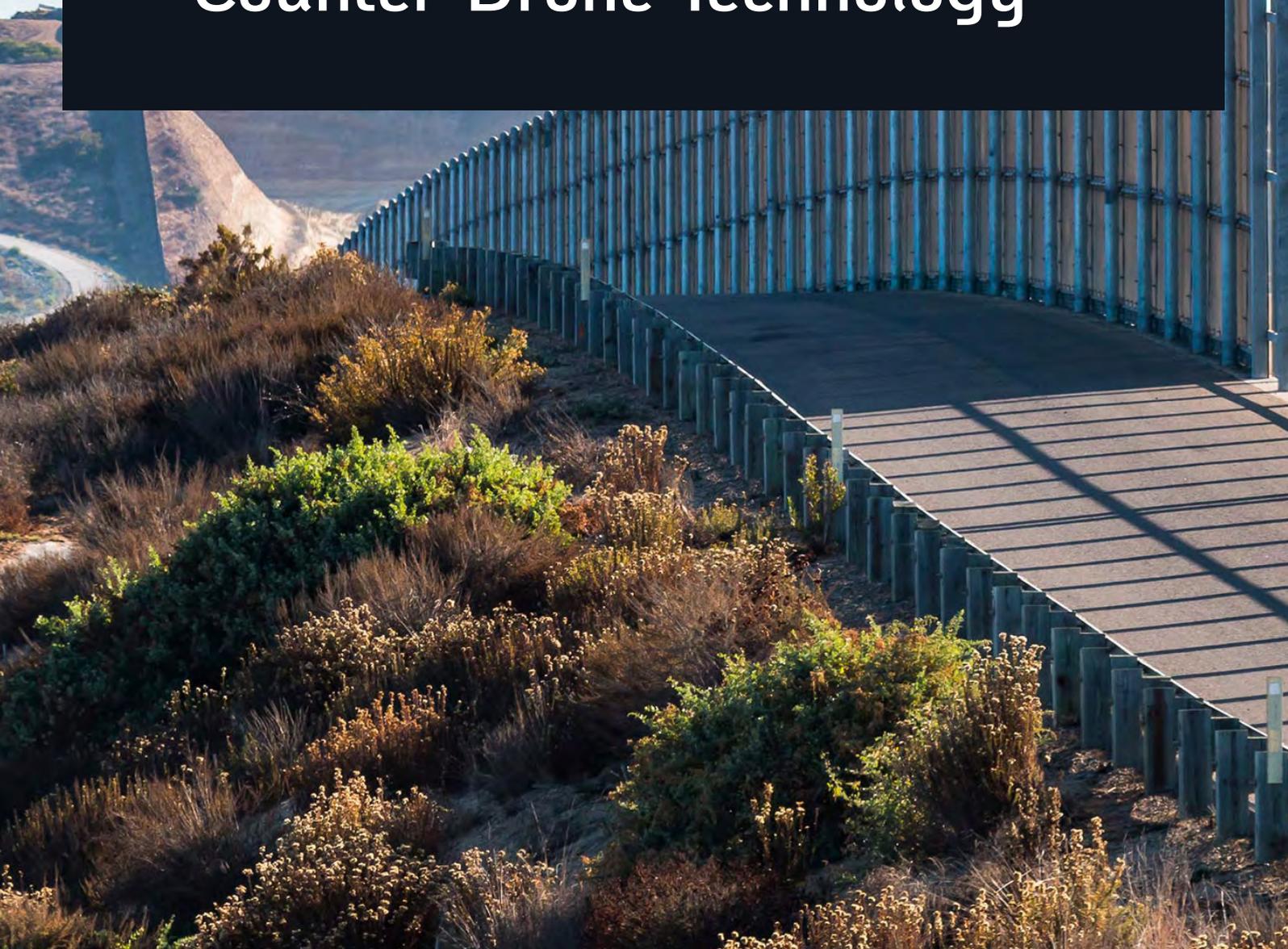




Security Agencies Bring
Order to the Border with
**D-Fend Solutions' EnforceAir
Counter-Drone Technology**



Difficult Times at the Borderlines

Rogue or unauthorized drones are increasingly used to smuggle contraband, such as weapons or drugs, from one country into another. Some illegal trafficking organizations also use small, unmanned aerial systems (sUASs) to scout for weaknesses in the fence, wall or perimeter protection, so they can smuggle or traffic people across the border.

Overcoming these challenges is difficult for border security agencies, in part because borders are usually long and can be delineated by mountains, shorelines, or densely populated urban areas.

While confronting these challenges, border security personnel must consider jurisdiction and privacy concerns, as well as evolving regulations – which often differ between countries and regions.

Multiple government agencies responsible for border protection within a large G7 country, and with international missions as well, were using radars several years ago for drone detection. The radar operators on the border found it difficult to differentiate between small drones and other flying objects, such as birds, and received false alarms. Without a counter-drone mitigation capability, these agencies used radars and cameras to track border-crossing drones and then sent personnel to check if contraband was dropped. This approach was time-consuming and had a low success rate.

D-Fend Bolsters the Border

As the agencies struggled with limited capabilities organic to their organizations, they looked for alternatives. D-Fend participated in several joint inter-agency demonstrations focused on rapid development and implementation of C-sUAS technology. **One agency** with border security responsibilities selected D-Fend over hundreds of C-sUAS vendors who also demonstrated at the events.

Another agency, also responsible for certain border activities, chose D-Fend after a strong referral from a major law enforcement agency using D-Fend's EnforceAir system, and observing multiple demonstrations in sensitive environments. Both organizations now deploy multiple D-Fend systems at various border locations.

Busy Borders in 2020-2021 (representative incidents)

Border Patrol agents in Arizona seized **over \$300,000** in cocaine and methamphetamine dropped by drones flown from Mexico.

Police in India arrested a kingpin who oversaw the smuggling of heroin and weapons from Pakistan into India.

A drone attack by the Iran-backed Houthi militia in Yemen caused a civilian airplane at a Saudi Arabian airport to catch fire.

Benefits for the Border Organizations

- Greater situational awareness of the drone threat and visibility
- Preservation of continuity, including communications systems
- Continued use of authorized drones
- Integration with third-party law enforcement platforms

These organizations saw firsthand that **EnforceAir**, D-Fend's flagship solution that offers the world's leading counter-drone, radio frequency/cyber-based takeover technology, significantly reduced false positives, operated effectively regardless of terrain and executed safe landings and outcomes without the limitations of traditional approaches.

Unlike other anti-drone solutions on the market, EnforceAir uses non-jamming and non-kinetic techniques to mitigate drone threats. It is important to note that existing communication signals operating on the same frequency bands (Wi-Fi and point-to-point communications) could be disrupted or interrupted by some counter-drone capabilities, such as jammer-based systems.

EnforceAir does not disrupt these essential communications signals. It passively "listens" and emits low power in mitigation mode. This was a critical evaluation factor for the two agencies, as radio networks, satellite imagery feeds and other sensor collection communications systems must remain fully operational while employing counter-drone capabilities.

D-Fend Solutions' offering keeps borders and personnel secure by autonomously fending off rogue drones, or landing them safely in a designated area. EnforceAir effectively prevents the type of collateral damage caused by kinetic or jamming solutions. It empowers border security agencies to retrieve drone payloads being carried by rogue drones, and identifies and tracks the location of the drones' take-off positions and remote-control operators.

D-Fend Solutions' EnforceAir is an ideal solution to protect borders from illegal drone incursions, regardless of terrain. EnforceAir requires no line-of-sight and can be deployed in both static and mobile, on-the-move configurations. EnforceAir's Multi-Sensor Command and Control (MSC2) system fuses sensor data from multiple EnforceAir systems into one user interface, **combining artificial intelligence and machine learning** to select the optimal sensor or system to mitigate a threatening drone, while other sensors continue monitoring the airspace.



Location

G7 country with multiple active borders.



Border Security Organizations

Two governmental organizations tasked with ensuring border security



Solution

EnforceAir, the world's leading cyber takeover technology



D-Fend's Border Guard Customers

Government agencies responsible for border protection and law enforcement (stopping smuggling) in multiple areas, and on international missions.



Evaluation Process

D-Fend was selected by several agencies following multiple inter-agency counter-drone demonstrations featuring over 10 C-sUAS vendors. Another agency chose D-Fend after a strong referral from a law enforcement agency and then multiple demos.

The Benefits

The two border security organizations now possess greater **situational awareness and visibility into the techniques, tactics and procedures used by nefarious organizations or bad actors using small, unmanned aerial systems to conduct illegal activities**. This includes knowing the expected frequency and possible locations of attempted drone crossings, as well as the types of drones most often used.

EnforceAir's capability to distinguish between authorized and unauthorized drones has also benefitted the agencies. Many border patrol units utilize drones for aerial security along the border in places where there may be camera gaps. Solutions employed by these units must not disable the use of sUASs. With the EnforceAir system, drones can be tagged, or white-listed as "authorized" to fly near the border, and continue operating while being tracked by the system. This capability is absent from radars and other traditional detection systems employed today and is essential to a system-of-systems approach.

Operational Flexibility

Both agencies benefit from our multiple deployment options, which provide optimized coverage for a wide variety of scenarios, conditions and terrain types. The hardware is lightweight and compact, and can be rapidly disassembled, moved and reassembled in minutes. The following options are ideal for border deployments:

Deployment Type	Description/Benefits
Ground-Level Tactical Kit	D-Fend Solutions' kit provides complete support for ground forces, with 360-degree azimuth coverage.
Military Vehicle Kit	Ideal for providing a moving bubble of coverage while traveling along border roads and paths, the kit includes a shock-absorbing cradle for EnforceAir's software-defined radio (SDR) unit and the ground-level military antenna radome.
Vehicle Kit	A discreet way to deploy EnforceAir. This option is designed for mission-critical mobile scenarios, such as VIP protection. The system is easily mounted and transferred between different vehicles within minutes, without drawing undue attention or damaging the vehicles.
Long-Range Directional Kit	Designed primarily for stationary, long-range coverage deployments, such as protecting borders' airspaces. This kit provides a unique, dual-sensor solution with extended detection and mitigation range.





Taking the Fight to Rogue Drone Operators

Both security agencies in this G7 nation have seen an expansion of their mission and significant enhancements in their counter-drone capabilities. They have extended their ability to detect and mitigate a wider array of drone types and drone protocols, while also adding payload collection to their operational scenarios through safe-route, safe-land functionality provided by our EnforceAir system. Increasing these border agencies' counter-drone arsenals with the dynamic EnforceAir solution enables them to take the fight to drone operators conducting illegal border operations via drone.



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