Artificial Intelligence For Multi-Mission Threat Protection and C-UAS Defence

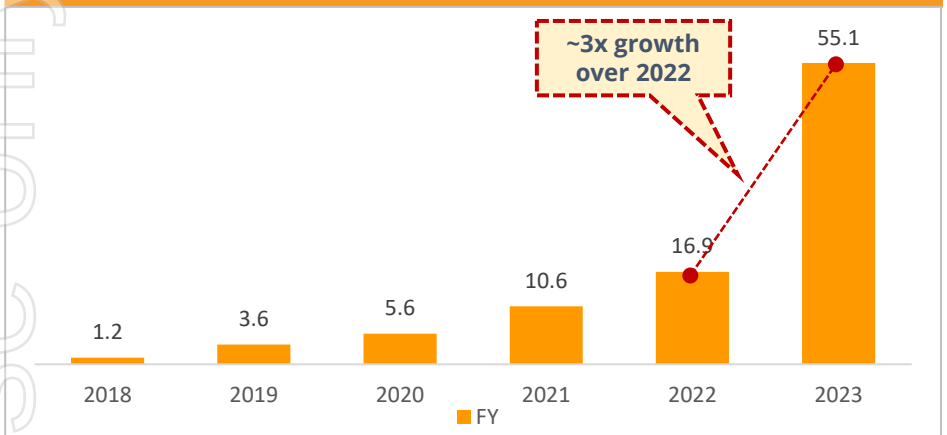
DroneShield Limited (ASX:DRO)
Investor Presentation
January 2024

Image: Australian Prime Minister Anthony Albanese holding DroneShield DroneGun Mk4, a handheld counterdrone system, with DroneShield US CEO Matt McCrann (far right), at the White House complex in Washington DC

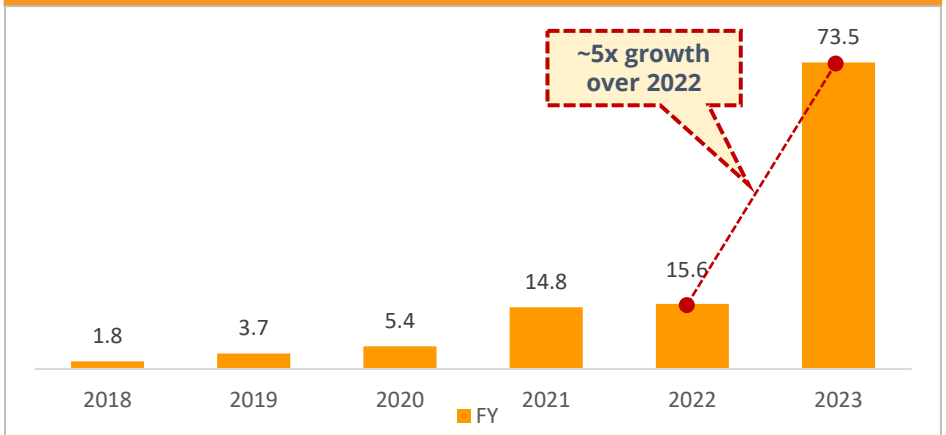
Rapid Profitable Growth ($m, Dec YE)

The business is accelerating its rate of growth, while becoming profitable

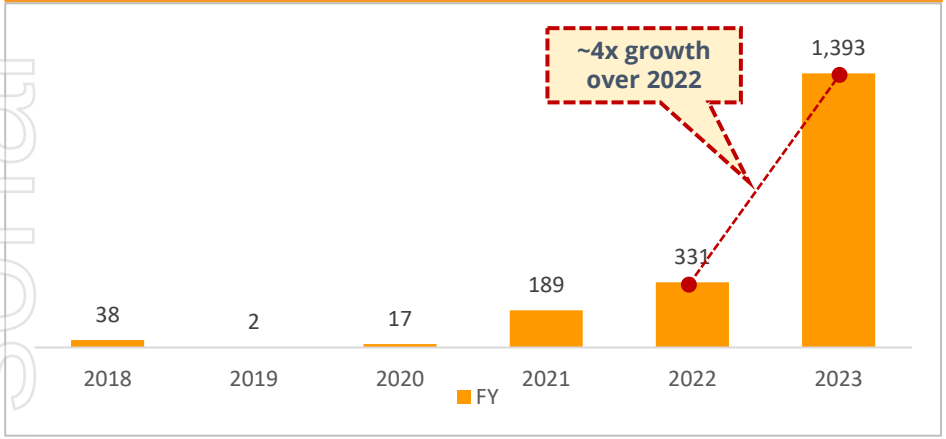
Strong Revenue Growth (A$m)



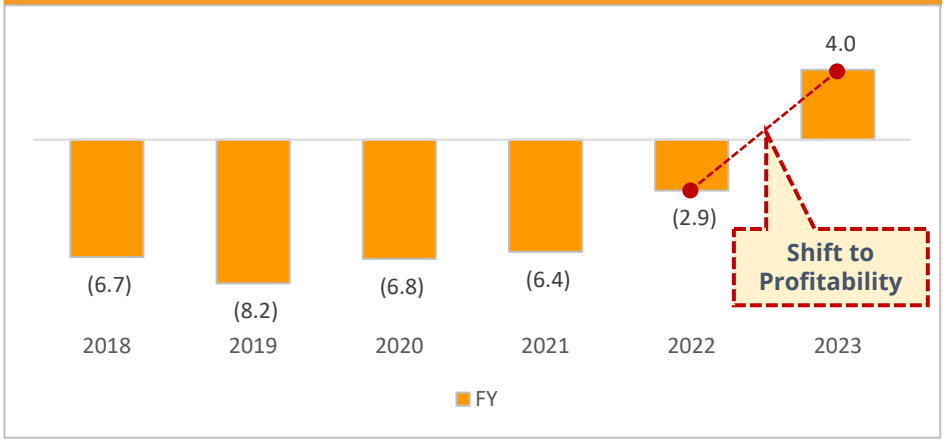
Cash Receipt Growth (Sales + Grants) (A$m)



SaaS Revenue Growth (A$000)



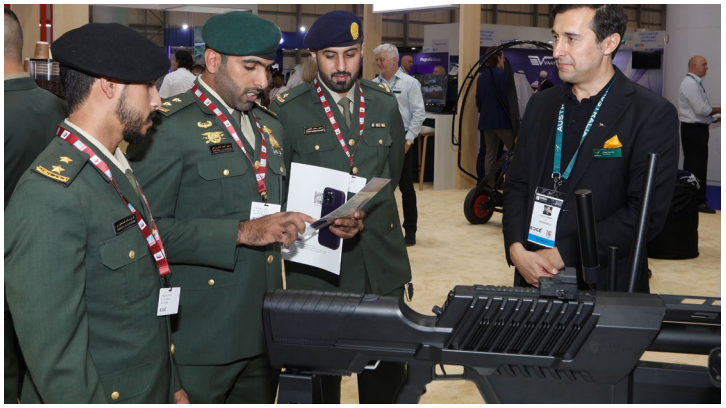
Becoming a Profitable Business (A$m)



SaaS model was fully introduced in 2021

Strong 2023 Creating a Solid Base for 2024

- Record contracts and rapidly growing cash receipts
  - **FY23 $73.5 million cash receipts**, **up 5x** vs FY22
  - **FY23 $55.1 million revenue**, **up 3x** vs FY22[1]
  - 80% of revenues are from repeat customers
  - The revenue vs cash receipt difference mostly due to advanced payments on product subscriptions (SaaS), warranties, as well as grants received
  - Largest geographical segment revenue contributions are US at 68% and Australia at 23%
- FY23 is **first profitable year**, with $4 million profit before tax[1]
- **Shareprice up 64%** over 2023 (vs 9% for ASX300)
- **Cash balance of $57.9 million** as of 31 Dec 2023, no debt or convertibles
  - Committed supply chain payments of $30 million
- **$30 million** contracted **backlog and pipeline of over $400 million[2]**
- Substantially completed expansion of the team to enable build, delivery and support of materially larger orders
  - Moving to a larger Sydney facility (3x current floor space) by end of Jan 2024, plus supply chain partners been rapidly expanding
  - No material cost to DRO to move, due to light capex model (heavy machinery work all outsourced) and landlord fitout incentive payments
  - Positions the company for $300-400 million annual production capacity
  - 105 team members including over 85 engineers
- Favourable environment for DroneShield with rapidly rising counterdrone, defence and security spending globally
  - The Ukraine conflict continues to highlight the use of drones on the battlefield, which will continue driving increasing C-UAS orders even after the eventual ceasefire
  - Drones increasingly used across global conflicts, including Hamas terror attack on Israel



DroneShield at the 2023 AUSA and the Dubai Airshow (top and bottom images)

[1] *Unaudited preliminary estimates. Audited results due in February 2024.*
[2] *There is no assurance that any of the Company's sales opportunities will result in sales.*

DroneShield "Secret Sauce"

C-UAS pioneer, full in-house suite of multi-mission products, culture of innovation and deep channels to market

Market leading, differentiated technology

- **All hardware (except radar and camera) developed and made in-house (with outsourced manufacturing to DRO's specifications for large batches)**
  - low in-house capex as heavy industrial work is outsourced at lower margins to DRO specifications
- **All SaaS software, including AI engines for RF sensors, cameras, sensorfusion; and EW work, done in-house**
  - robust software and digital infrastructure to support enterprise grade software updates, monitoring and retrieval
- **85+ in-house engineers (out of team of 105) developing and integrating IP into product updates**
  - FPGA, AI/ML, RF/waveform, data engineering, field service engineering, front-end, back-end, platforms, mechanical engineering, industrial design, UI/UX, and production engineers, quality managers

Global pioneer with strong team and brand

- **The original counter-drone pioneer, with a strong global brand and reputation for innovation and quality**
- **Experienced in-house veteran sales team (complemented by global distributor network)**

Complete product, integration and geographic coverage

- **Body-worn, vehicle/ship and fixed site systems**
- **Both integrator and sensor maker – can integrate third party sensors/effectors, and have its sensors easily integrated into larger systems**
- **Global presence in around 70 countries via experienced and trained distributor network**
- **Mature technology development roadmap executed by a seasoned counterdrone team, ensuring solutions adapt to counterdrone market shifts**

Numerous other differentiators

- **Substantial and growing in-house AI databases for RF, sensorfusion and optical/thermal AI**
- **Deep sales pipeline and relationships with end users and channel partners, following multi-year nurturing and growth**
- **Security clearances, certifications, NATO Stock Numbers. Non-ITAR solutions.**

Problem and Opportunity: Drones as a Threat

Drones - A Critical and Growing Threat Vector

CNN World Africa Americas Asia Australia China Europe India Middle East United Kingdom

Russia launches 'kamikaze' drone attack on Kyiv, killing 4 and hitting civilian infrastructure

By Victoria Butenko, Olga Voitovych and Yulia Kesaieva, CNN
Updated 3:09 PM EDT, Mon October 17, 2022

Drone activity at Augusta Correctional Center in Craigsville causes lockdowns

Drugs and weapons were given to the windows of the Donacona prison

Flights into Gatwick diverted after reports of drone near airport

Spokesperson says 12 incoming flights affected during almost hour-long suspension due to alert

A British Airways plane at Gatwick. The carrier said one of its flights was diverted to Stansted before refuelling and returning to the West Sussex airport. Photograph: Gareth Fuller/PA

LOCAL NEWS ›

Unauthorized drone causes temporary ground stoppage at Pittsburgh International Airport

KDKA NEWS JUNE 5, 2023 / 12:53 PM / CBS PITTSBURGH

Forbes

FORBES › MONEY › PERSONAL FINANCE

The Drone Is Quickly Becoming A Federal Prison Contraband Nightmare

Walter Pavlo Contributor
I write and consult on federal criminal law and criminal justice.
Follow

1 Dec 27, 2022, 06:57pm EST

BORDER CRIME

Smugglers use drones to spy on agents in the field, Border Patrol says

by: Salvador Rivera
Posted: Mar 9, 2023 / 06:27 PM CST
Updated: Mar 16, 2023 / 07:30 PM CDT

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POLITICS · WAR

How Hamas flooded Israel, killed hundreds and took another 100 hostage: A revolution in drone warfare dating back to Ukraine

BY MICHAEL J. ARMSTRONG AND THE CONVERSATION
October 9, 2023 at 3:49 PM GMT+2

100 drones a day in Sydney Airport no-fly zone

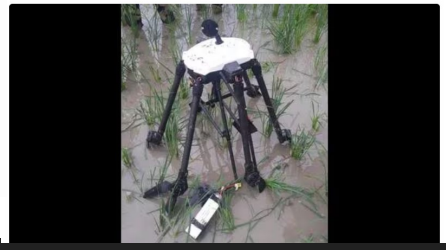
A sharp increase in drones flying in airport no-fly zones has commercial pilots on alert and the regulator erecting warning signs.

Pak smugglers switch to smaller, stealthier drones to drop drugs into Punjab

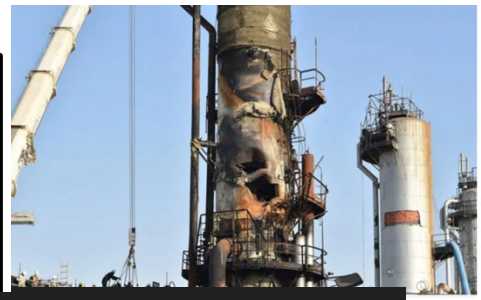
By Ravinder Vasudeva , Chandigarh

Aug 18, 2023 12:09 AM IST

Reason: Such drones can fly long distances and make comparatively less noise, thus making it harder for security agencies to detect these as compared to the large-sized drones.



Saudi Arabia Reveals Extent Of Damage To Oil Plants After Drone Strike



THE WALL STREET JOURNAL.

Russia Hits Ukraine's Kyiv Region With Drone Attack

Ukraine's air-force command says it downed six Iranian-made drones over the south

Rising Tides of Military and C-UAS Spend Present Tailwinds for Continued, Accelerated Growth

Key Market Drivers

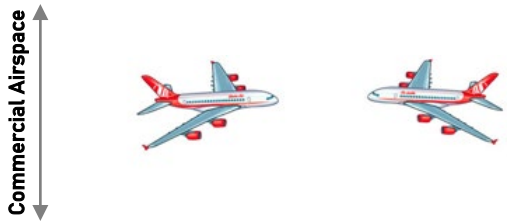
- Rising Global Conflicts & Geopolitical Tensions
- Proliferation of Cheap Combat & Consumer Drones
- Escalation of Drone-Based Offensives
- Advancements in AI & Autonomous Warfare Technology

DroneShield is the only pure-play C-UAS publicly listed company globally, providing the C-UAS sector exposure.

Driving an Urgent Need for Counter-Drone Solutions Across Both Military & Civilian Sectors

The Rapid Proliferation of Drones has Escalated the Potential for Disruptive Incidents…

- Payload Delivery
- Intel Gathering
- Swarms
- Nuisance Activity
- Cyber Attacks



Deepening the Demand for Robust Countermeasures, Positions DroneShield for Sector-wide Market Capture with its Sophisticated, Proprietary C-UAS Solutions

Growing Counter-Drone Applications Across End Markets

Military

Government Facilities

Law Enforcement

Protective Details

Airports

Stadiums

Commercial Venues

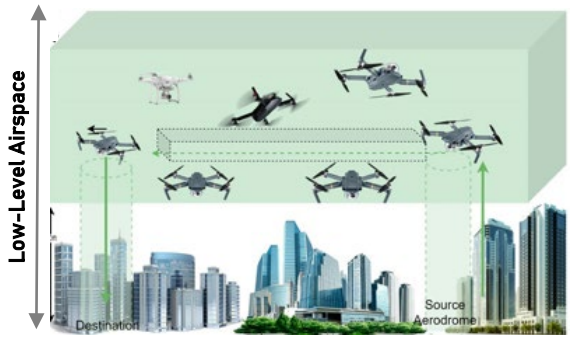
Energy Production

High Profile Events

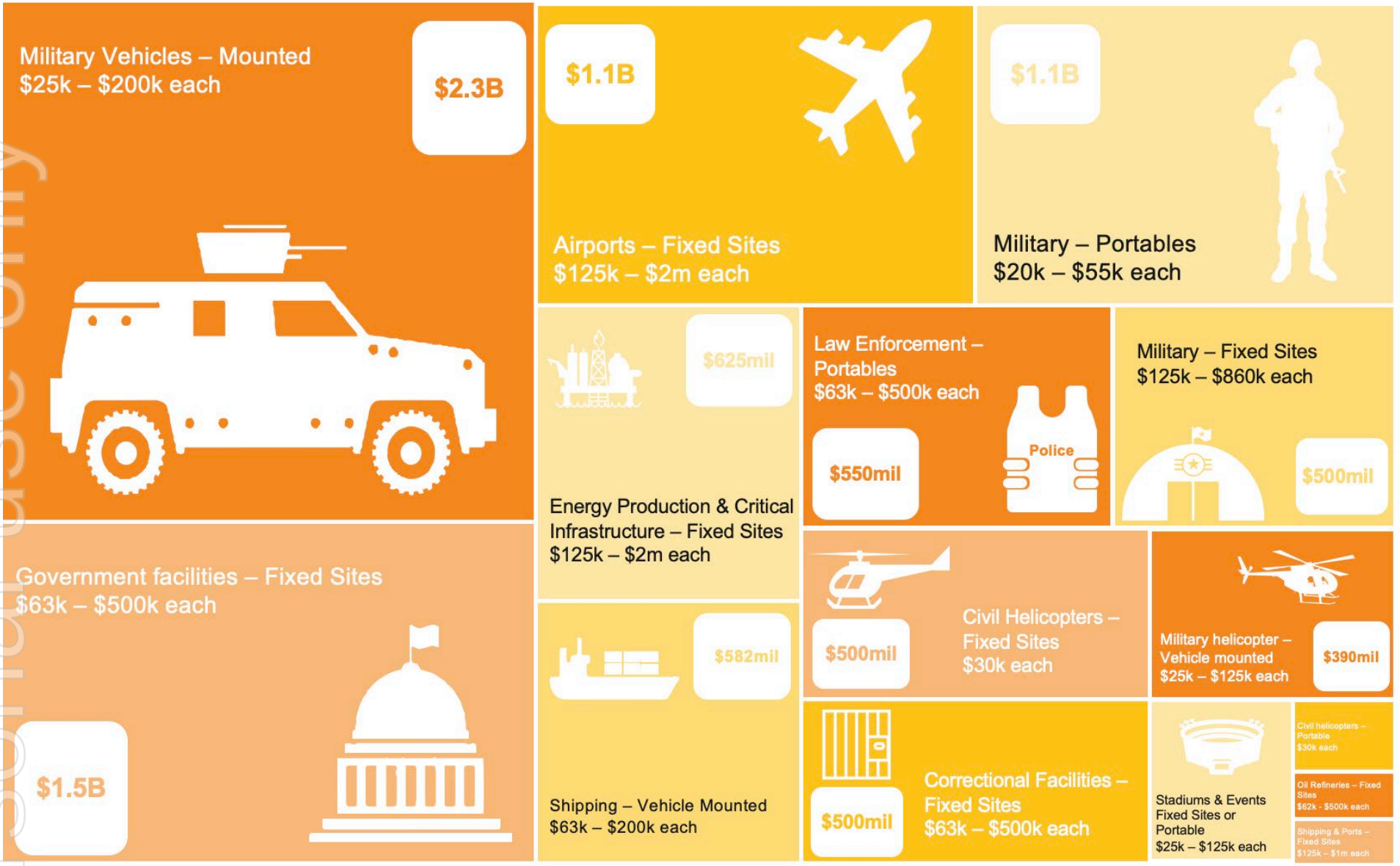
Shipping / LNG Ports

Rescue / Fire Response

Correctional Facilities



With a Vast and Growing TAM of >US$10b



Note: All dollar figures are in US$

DroneShield Overview

The DroneShield Story: Emergence of an Industry Leader

1. MARKET PIONEER IN COUNTER-DRONE TECHNOLOGY AT THE FOREFRONT OF INNOVATION…
2. …UNDERPINNED BY CUTTING-EDGE PROPRIETARY AI-BASED SOFTWARE CAPABILITIES…
3. …VALIDATED THROUGH TOP TIER CUSTOMER BASE
4. EXCEPTIONAL BRAND AND DIFFERENTIATED MARKET POSITION
5. AT A CRITICAL INFLECTION POINT, CAPITALIZING ON NUMEROUS GROWTH VECTORS…
6. …EVIDENCED BY RAPIDLY SCALING FINANCIAL PROFILE
7. LED BY A VISIONARY TEAM OF INDUSTRY VETERANS WITH DEEP INDUSTRY EXPERIENCE

Summary

DroneShield Overview	• Founded in 2014 and listed on the ASX in 2016, DroneShield provides **Artificial Intelligence platforms** for **protection against drones** • **Hardware and software** to detect and safely neutralise small drones used for warfare, terrorism, contraband delivery, and airport disruptions • **Key customers** include military, intelligence community, Homeland Security, law enforcement, critical infrastructure, prisons and airports globally
Business Model	• **Three streams of revenue**: hardware (drone detection and defeat devices), SaaS (device software updates) and R&D • Sales through an **experienced in-house veteran salesforce with distribution partners across over 70 countries** • SaaS is expected to become a **significant proportion of overall revenue** over the next 5 years • R&D contracts are adjacent to the core technology, and contribute advanced capability in-house
SaaS via Proprietary AI Software Engines	• **RFAI™** (radiofrequency spectrum engine), **DroneOptID™** (optical AI engine), **SFAI™** (sensorfusion AI engine) • The engines undertake real-time, at the edge, **detection and identification of drones** and other potential threats • The result is an **increase in detection responsiveness**, **lower false positives** and an **increase in the speed** at which new threats are detected, classified and tracked by DRO systems • Customers receive **regular software updates** via enrolling in a SaaS model at the time of purchase of their systems • All solutions except for radars and cameras hardware fully developed in-house, with no reliance on third party IP
Addressable Market	• **US$10 billion** worldwide addressable market • Rapidly improving and easily available drone technology is **driving demand for counterdrone solutions** • **Current geopolitical conflicts make extensive use of drones by all sides**
Growth Strategy	• Today, over **75% of revenues is derived from defence** • Defence, intelligence community and border security will continue to be the key focus, however there is a **major opportunity for growth** into civilian airports, critical infrastructure, prisons, stadiums and corporates

Market Pioneer in Counter-Drone Technology at the Forefront of Innovation

Complete Multi-Mission Counter-Drone Arsenal with the Best Product for Every Scenario

Body-Worn			Vehicle / Stationary		Fixed Site		
							
DroneGun Mk3	DroneGun Mk4	DroneGun Tactical	RfPatrol Mk2	DroneSentry-X Mk2	DroneCannon	RfOne	DroneSentry

Best in Breed, Proprietary Technology


Multi-Sensor Detection, ID and Tracking


World Class Detection Range


World Class Defeat Range

Protecting Against a Wide Range of Threats


Aerial Vehicles | Ground Vehicles | Surface Vehicles | Underwater Vehicles

With An Established Competitive Moat


Veteran Sales Force with deep market experience and strategic expertise

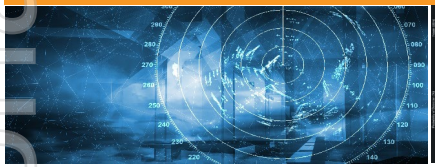

Top Tier Customer Base with prestigious US DoD recommendation


World Class Engineering Talent with 85+ in-house innovators developing & integrating IP in-house


Global Presence across ~70 countries via experienced and trained distributor network


Robust Credentials including security clearances, best-in-class certifications, NATO stock numbers

Software (SaaS and R&D contracts)


Electronic Warfare and SIGINT


RFAI (Radiofrequency AI engine)


DroneSentry-C2 and DroneOptID

With a 360-degree approach to drone threats, DroneShield's products are uniquely multifaceted and cater to diverse operational needs

Explosive Growth Based on a Strong Foundation

2014-2017 Building the Foundation

- Setting up in Australia and US
- ASX IPO (raising $7m)
- R&D and productizing the initial product family:
  - DroneGun Mk1 and Mk2
  - Acoustic detection sensors
- Team grows to 11 staff
- Global partner network setup
- C-UAS market in infancy
- Customers demos, trials and initial smaller orders
- From nil to $300k/year annual revenue

2018-2022 "Green Shoots"

- Multiple $1m+ orders
- $3.8m 2-year R&D contract
- $9.6m and $17m capital raises, $3.7m Epirus investment
- Completing the product line-up:
  - DroneGun Tactical
  - RfPatrol Mk1 and Mk2
  - DroneSentry-X
  - Refinement of DroneSentry
  - Introducing SaaS model
- First-ever ACMA licence to manufacture jammers
- Team grows to 60 staff
- From $1m to $17m annual revenue

2023 Explosive Growth

- $33m U.S. Govt sale
- $9.9m 2-year R&D contract
- Numerous other multi-million contracts
- $40m capital raise in March 2023 to fund working capital and scale the team
- 105 staff in Sydney and Virginia
- Exploding market, with Ukraine highlighting the need for C-UAS products
- $30m order backlog
- $400m pipeline
- First profitable year

2024-2028 Transforming to Next Level

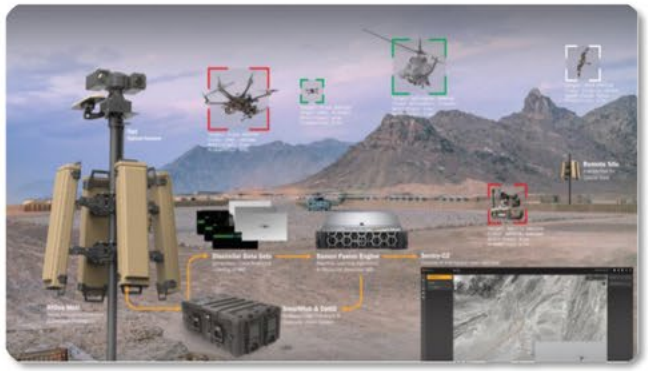
- 5-year target*:
  - $300-$500m annual revenue
  - 50% of revenue in SaaS and software R&D
- This revenue is expected to be supported by 120-150 staff

** There is no assurance that any of the Company's sales opportunities will result in sales.*

Cutting-Edge Proprietary AI-Based Software Capabilities

ROBUST SOFTWARE SUITE

INTEGRATED ACROSS THE DRONESHIELD ECOSYSTEM



POWERED BY BEST-IN-CLASS TECHNOLOGY

- **Advanced Computer Vision & ML** to detect and track drones in complex environments
- **Sophisticated, Proprietary Algorithms** to enhance real-time threat analysis and response
- **Substantial & Growing Threat Database** leverages 35,000+ database of drone samples to precisely classify drones
- **Regular Software Updates** maintains technological edge and responsiveness

DRONESHIELD'S SOFTWARE IN ACTION – CASE STUDIES

U.S. Navy

- **Deployment:** DroneSentry-X and DroneSentry-C2 on the U.S Navy's M80 Stiletto vessel for 6 weeks
- **Technology:** Powered by RFAI, DroneShield's AI/ML signal detection and classification engine
- **Capabilities Demonstrated:**
  - ✓ Advanced AI/ML signal detection & classification with RFAI, enabling robust detection of a diverse range of unmanned threats
  - ✓ High-performance adaptability in various sea states against swarms, showcasing sophisticated AI-driven response in dynamic environments

IRONMAN Sports Event

- **Deployment:** DroneSentry and DroneOptID, used for the 2nd consecutive year at the event
- **Technology:** DroneOptID for AI-powered detection, identification, and tracking
- **Capabilities Demonstrated:**
  - ✓ Leveraged AI to provide instant notifications to security personnel, enabling prompt response to potential aerial threats
  - ✓ Software system was able to integrate with existing security measures at the event, demonstrating its flexibility

At a Critical Inflection Point, capitalizing on numerous Growth Vectors

Contracts Executed

- ✓ US Agency: A$33M
- ✓ Five Eyes DoD: A$11M
- ✓ European DoD: A$11M

Continue Market Leadership & Expand Wallet Share

- Leverage industry pioneer status to **deepen penetration in key markets**
- **Expand wallet share among existing clients** by embedding more solutions into key customer systems
- **Capitalize on U.S. DoD recommendation** and track record with other top customers to reinforce brand strength

Grow Adjacent Electronic Warfare (EW) Capabilities

- **Capitalize on the ~$10m Five Eyes DoD contract** to enhance EW offering
- **Expand EW capabilities, utilizing software-centric approaches** to provide scalable and versatile solutions
- **Explore broader distribution opportunities** within the AUKUS alliance to enhance global reach in EW

Accelerate SaaS Subscriptions

- **Intensify focus on SaaS model** to drive recurring revenue through subscriptions
- **Expand userbase for key products**: RFAI and DroneSentry-C2
- **Leverage in-house AI & ML engines and capabilities** to continuously enhance threat detection & response, ensuring high customer retention

Expand into Adjacent Markets

- **Increase penetration in civilian sectors** such as airports, infrastructure, and facilities, where drone threats are escalating
- **Extend market reach into non-traditional sectors** like shipping points, first response, and prisons, where DroneShield's tech can add unique value
- **Capitalize on geopolitical tensions** to identify new markets for expansion

Strategic Alliances & Partnerships

- **Forge strategic alliances** with defence contractors and technology firms to integrate solutions into broader security systems
- **Collaborate with government bodies** for co-development projects
- **Pursue partnerships with private security firms** to expand the reach into commercial and VIP protection markets

Future Contracts

✓ 7 high probability major near-term contract wins representing ~A$200M

✓ Initial contracts often serve as a foothold in forming lasting, high-sales-volume customer relationships

Competitor Analysis

Exceptional Brand and Differentiated Market Position

	DRONESHIELD	ANDURIL	CACI	HIGH POINT	Dedrone Aerial Armor	ELECTRONIC WARFARE	Radio Hill	BLUEHALO	SRC	D-FEND SOLUTIONS
Origin	AUS / US	US	US	US	DE / US	US	US	US	US	IL
Integrator	✓	✓	✓	✓	✓	-	-	-	-	-
DETECT										
Dismounted	✓	-	-	-	-	-	-	-	-	-
Vehicle	✓	-	✓	-	-	-	-	✓	✓	✓
Fixed Site	✓	✓	✓	-	✓	-	-	✓	✓	✓
DEFEAT										
Dismounted	✓	-	-	✓	✓	✓	✓	-	-	-
Vehicle	✓	-	-	-	-	-	-	✓	-	✓
Fixed Site	✓	✓	-	✓	-	-	-	✓	✓	✓
COMMENTARY										
Platform information		✓ Integrator via its Lattice platform	• Substantially an integrator • Acquired AVT, a smaller integrator	• Roll up by Highlander Partners of Liteye and Black Sage • Integrator/C2 supplier	• Focus on law enforcement • Acquired Aerial Armor Jan 23	• Handheld Dronekiller jammer gun • Lacks a full product suite	• Handheld DroneBuster jammer gun • Lacks a full product suite	• RF detect-and-defeat (via Citadel purchase) • LOCUST laser defeat • Acquired Verus Mar 23	• Offer an expensive, competing product to DroneSentry	• Protocol manipulation – similar legal restrictions to jamming, less reliability, no swarm protection

DRONESHIELD

- ☑ Most extensive product range on the market
- ☑ Unrivaled versatility from handheld to fixed-site solutions
- ☑ Sole provider of fully in-house integrated sensor systems
- ☑ Large IP portfolio and robust AI capabilities
- ☑ Battle-tested, superior performance

Note: Competitor analysis based on publicly available information

Appendices

Geopolitical Environment Providing Market Tailwinds

Increased expenditure by Western Governments in response to the war in Ukraine

- US DoD increasing 2023 budget to over US$800bn, a record peacetime amount[1]
- Germany increasing spending to over 2% of GDP (from 1.53% in 2021), including a new EUR100bn fund to modernise military[2]
- Poland have announced a record 2023 Defence budget at 3% of GDP[3]
- Australia completed Defence Strategic Review, with expectations to increase the allocations to asymmetric, high-tech and greyzone warfare

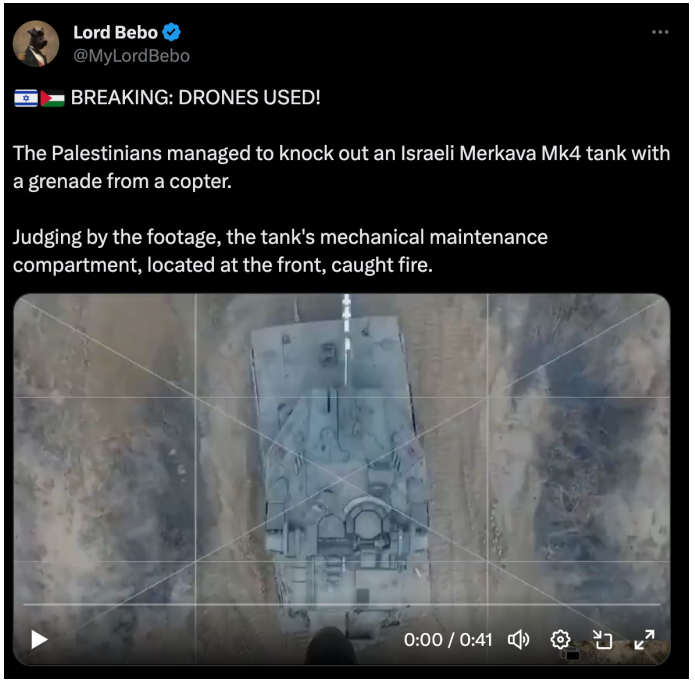
In Australia, the Government is seeking to rapidly grow sovereign defence capability, with several key focus areas directly matching DRO expertise, including counter-robotics, Electronic Warfare, and battlefield surveillance (ISR)

Record Defence and Security budgets, combined with a demonstrated use of drones by both sides in Ukraine for payload delivery, directing artillery strikes, collecting field intelligence and general use, has put increasing focus on both drone and counterdrone systems for all major militaries

Increasing global tensions and use of drones across hot zones, including Hamas attack on Israel, and in the Armenia/Azerbaijan ongoing conflict

DroneShield is one of very few fielded and proven counterdrone systems with US DoD recommendations and based in Australia and US, hence well positioned to supply to Western allies

Combined, these factors are expected to lead to meaningful and consistent order flow for DroneShield across near and medium term



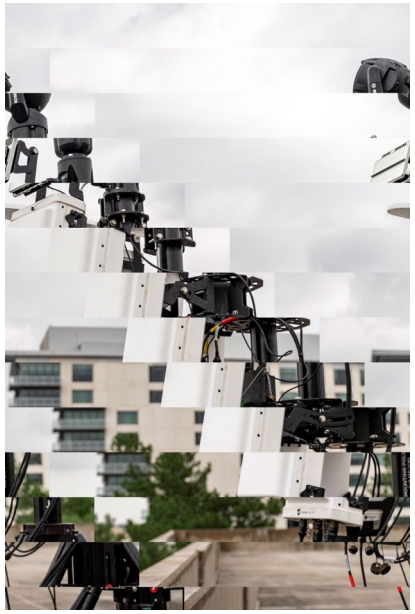
Iranian Shahed drones used by the Russian military

[1] https://news.am/eng/news/711941.html
[2] https://www.reuters.com/business/aerospace-defense/germany-hike-defense-spending-scholz-says-further-policy-shift-2022-02-27/
[3] https://www.trade.gov/market-intelligence/polands-defense-spending

How a Counterdrone System Works

DroneShield Performs all 3 steps of the Process

DETECT



State of the art, multi-sensor drone **detection** products provide optimal detection and identification of drones and other UAS threats

ASSESS

Machine learning and AI based detection and classification software for near-real time **tracking** and **assessment** of drone threats

RESPOND

Respond / defeat technologies offer intelligent, responsive, non-kinetic solutions for the controlled management of threats

Counterdrone Detection Solutions

DroneShield uses Multi-sensor Drone Detection for Optimal Results, Unaffected by time of Day or Weather

	Radio Frequency	Radar*	Cameras*	Acoustic*
Imagery				
Overview	• Foundational layer • Detects drone comms protocols (via conventional RF library or an AI engine)	• Motion tracker - emits signals which are then reflected back to the radar by targets	• Electro-Optical (EO), Infrared (IR) and Thermal • Video analytics and image capture identification of drone activity	• Compares noise of drone blades or motor to a database of acoustic signatures
Advantages	✓ No interference with other sensors ✓ Tracks multiple targets ✓ Passive – cannot be “seen” ✓ Low false alarm rate ✓ Direction-finding capability ✓ Long ranges ✓ Cost effective	✓ Picks up drones without RF emissions ✓ Tracks multiple targets	✓ Best used for verification, classification and tracking of a target detected by other sensors ✓ Potential identification of payloads ✓ Provides “eye on target”	✓ Passive, cost effective ✓ Supporting sensor, filling gaps from other sensors
Disadvantages	× Doesn’t pick up RF-silent drones × Requires firmware updates	× False alarms (birds etc) × Is “seen” as emits energy × Longer range detection is expensive × Struggles with hovering drones	× Not well suited for detection on its own due to field-of-view vs distance trade-off × Short ranges	× Short range × False alarms × Cannot locate or track × Requires signature database updates

** Third party hardware, integrated into DroneShield combined multi-sensor solution, with differentiated offering via AI-powered software layers*

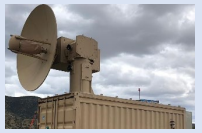
Counterdrone Defeat Solutions

DroneShield uses smart jamming which has advantages over other technologies, particularly, in its use across civil and military applications, and does not compete against large Defence Primes

DroneShield Offering

Exotic Tech, Limited Reliability

Large Defence Primes Dominance Area

	Safe – "soft kill" *No intentional damage to the drone*		Kinetic – "hard kill" *Physical force used with potential for destructive damage*		
	Smart Jamming	**Spoofing/Cyber/ Protocol Manipulation**	**Counter-Drone Drones**	**Projectile Fire Kinetic Systems**	**Directed Energy (Laser or Microwave)**
Imagery					
Overview	• Radio waves force a drone to fly back, hover, or land	• Hijacks the control of a drone	• "Kamikaze" or "catching" drones	• Remote weapons systems shoot down drones	• Lasers and high-power microwave systems "dazzle" or destroy a drone
Advantages	✓ Universal effectiveness ✓ 360-degree defeat coverage ✓ Effective against swarms ✓ Civil and military environments	✓ Allows for the re-routing and re-direction of malicious drone flight paths ✓ Applications in both civil and military environments	✓ "Catching" the drone is available to a wider range of customers	✓ Effective against Govt-grade drones ✓ Established technology for military operations	✓ Effective against Govt-grade drones ✓ Systems can be mounted on naval vessels for complex defence systems
Disadvantages	× Potential for collateral interference (for a "dirty" jammer)	× Not effective against all drones × Higher chance of collateral damage × 30-90sec per drone to engage, can't engage multiple drones same time	× Generally slow to deploy × Not effective against swarms	× Collateral damage × Unsuitable for use in a civil environment	× In early stages × Only available for military applications

Benefits and Applications of Safe, Layered, Counterdrone Systems over Kinetic Systems

Safe Counter-drone Systems Have Many Advantages over Kinetic Counter-drone Systems, which are only Practical for Deployment in War-like Scenarios

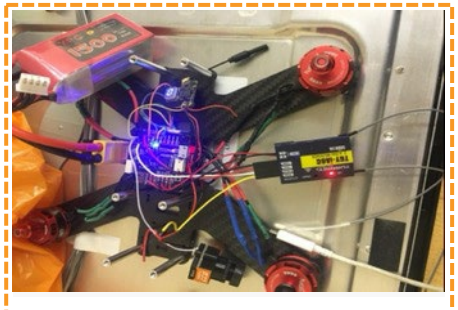
Avoidance of Collateral Damage

- DroneShield safe defeat solutions force drones to pre-set emergency protocols causing the drone to fly back to its starting point, hover, or land, safely neutralizing the threat
- Alternatively, kinetic solutions could see a destroyed drone fall on crowds of people or inflict “friendly fire” from projectiles

Evidence for Legal Prosecution

- A drone which has been forced to land can be collected by local law enforcement to track the whereabouts of its controller
- As drones are usually accompanied by an image recording device, this can be used as legal evidence to prosecute offenders

Intelligence Gathering



- Drones can often carry sensitive instruments or technology
- When forced to land, this technology can be exploited by military personnel to aid in intelligence gathering operations

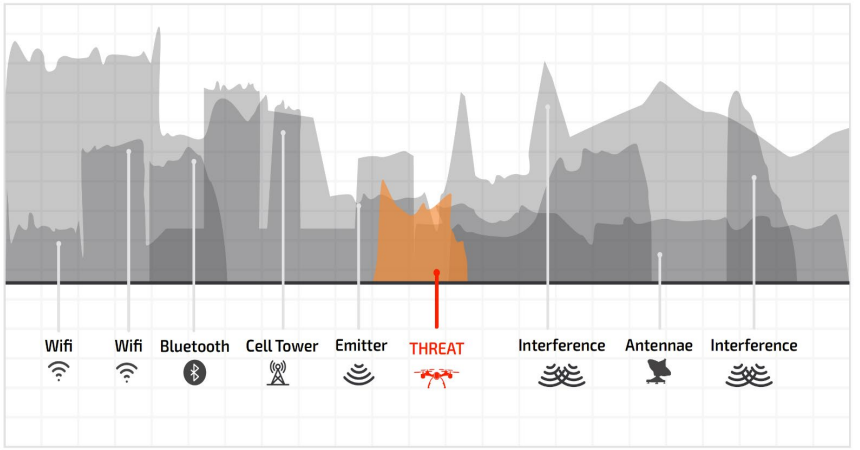
Multi-Platform with Scale Benefits

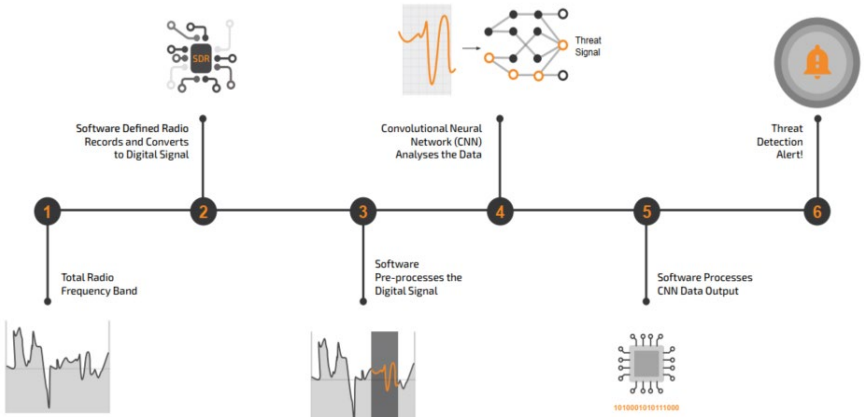
- Safe solutions can be carried on-the-man, mounted on light skinned vehicles and provide continuous passive protection unconstrained by ammunition stores
- Kinetic counter-drone solutions are often mounted on heavy, remote weapon stations and constrained by magazine depth

DroneShield AI Software Sees Through Noise – Radiofrequency Spectrum

World Leading Proprietary RF AI Platform for Protection Against Advanced Threats, such as Drones

- Drones operate in the densest parts of the Radio Frequency ("RF") Spectrum with "noise" coming from all kinds of other emitters including Wi-Fi, Bluetooth, cell towers and antennas
  - Drone detection technology needs to be able to pull a signal out of all the other "noise", while maintaining low false alarms
- DroneShield has developed a cutting-edge spectrum awareness capability using proprietary AI techniques through its RFAI™ engine
- The RFAI™ engine receives quarterly updates (intra-quarter updates also available) which get pushed to the devices globally
- <u>Why is this more advanced than the cell phone technology?</u>
  - Need to detect all protocols, all the time, on all bands, while cell phones are specific dedicated protocols on specific channels
  - Cell phones are a well-defined protocols with defined timing, frequency, and identifying signals to lock onto. This allows to optimize the system from the hardware bands being made narrow band so there is no interference. The Government licensed bands allow no interference sources, so the algorithms are defined, which means the math is defined
  - In C-UAS, there is no set sample rate, sample frequency, bands, licensed channel control, so there is no optimization about any one algorithm





DroneOptID AI Software – Optical and Thermal Spectrum Counterdrone Surveillance

DroneShield's DroneOptID AI engine detects and tracks complex threats such as drones in cluttered environments

- Drones are small, fast-moving objects, hard to detect with naked eye more than 50m away, against complex background

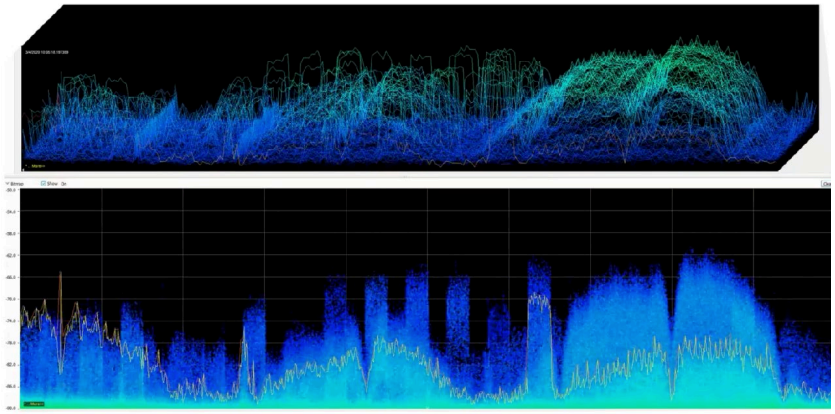
- Cameras on their own cannot detect and track drones at any meaningful distance, due to
  - the trade-off between the camera Field-of-View (FoV) and Depth. A wide FoV would only see drone at a close distance. A narrow FoV means only looking at a tiny part of the area
  - Even once an object is detected, separating drones from birds is difficult, especially for fixed wing drones

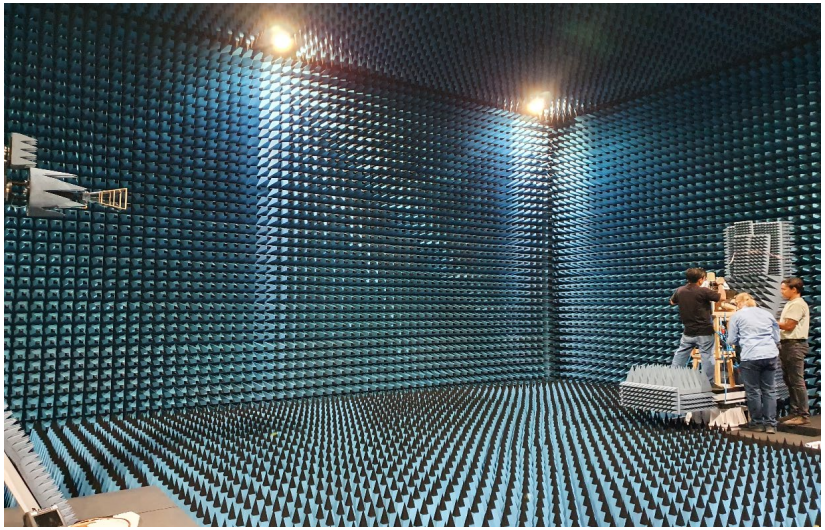
- To enable cameras to accurately detect and track drones and other objects, DroneShield has developed a proprietary AI engine DroneOptID™, in conjunction with University of Technology Sydney, with DroneShield retaining the IP
  - DroneOptID uses the latest in Computer Vision technology to detect, identify and track drones in real time, cutting through all the other "noise"
  - The software takes geographical and environmental data from other sensors in order to slew and validate a drone threat. Once the drone is in the field of view of the camera, using proprietary DroneShield algorithms, the DroneOptID software uses motion tracking and machine learning techniques to identify and track the target

Artificial Intelligence in Electronic Warfare

DroneShield is Favourably Exposed to the Fast-growing Electronic Warfare Business Segment

- **Electronic warfare (EW) is** any action involving the use of the electromagnetic spectrum (EM spectrum) or directed energy to control the spectrum, attack an enemy, or impede enemy assaults
- The purpose of electronic warfare is to deny the opponent the advantage of - and ensure friendly unimpeded access to - the EM spectrum
- Demand for smart EW technologies to jam, degrade, disrupt or neutralise an adversary capability are rapidly growing and are an essential part of modern warfare
- Given the overlap with DroneShield's counter-drone AI technology and the minimal Australian based competition in EW technology, DroneShield is in the box seat to exert dominance in this rapidly growing area
- In July 2023, DroneShield received a $9.9 million, 2-year R&D contract with the Five Eyes Department of Defence
  - Contract was awarded on a sole source basis
- Additional, and larger, contracts are expected, as DroneShield builds up its AI capabilities in the EW and Signals Intelligence arena





Visionary Team of Industry Veterans with Deep Industry Experience

Peter James

Independent Non-Executive Chairman

macquarie TECHNOLOGY GROUP

nearmap

ninefold

Oleg Vornik

CEO and Managing Director

RBC

ABN·AMRO

Deutsche Bank

Brookfield

Jethro Marks

Independent Non-Executive Director

THE NILE

Carla Balanco

CFO and Joint Company Secretary

Crowe Horwath

HLB MANN JUDD ADVISORY AND ACCOUNTING

Red McClintock

Sales Director

ROYAL AUSTRALIAN NAVY

BAE SYSTEMS

Tom Branstetter

U.S. Director of Business Development

TRIDENTGROUP™

SOC

A DAY & ZIMMERMANN COMPANY

Angus Bean

Chief Technology Officer

D+I™

Lawrence Marychurch

Vice President, Design

DRONESHIELD

Paul Cenoz

General Counsel and Joint Company Secretary

OSINT COMBINE

MORNING CONSULT

MCLP Murdock Cheng Legal Practice

CWL COX WOOTTON LERNER GRIFFIN & HANSEN LLP

Matt McCrann

U.S. CEO

CAMVI

G3 Technologies, Inc.

PROVIDING NEXT GENERATION WIRELESS SOLUTIONS

Raffael Battner

Operations Manager

Baraja

HUBER+SUHNER

Carl Norman

Vice President, Embedded Systems

CARDIAC Responder

bCODE

ADIS

jaycar

POE

ZAP STAND

GSN

ARA MANUFACTURE

Majority of the DroneShield senior team has been with the business for most of its history, delivering rapid growth.

Capital Structure

Capital Structure (approximately 10,000 shareholders) - 15 January 2024	
DRO Shares on Issue	611,403,611
DRO Options on Issue[1]	11,420,000
Fully Diluted Shares on Issue	**622,823,611**
Fully Diluted Equity Value[2]	$230.4m
Cash (as at 31 December 2023)	$57.9m
Debt	$nil
Fully Diluted Enterprise Value	**$172.5m**

[1] Options issued at various strike price and maturities. For full information please refer to ASX releases. Excludes 19.5m Performance Options approved at the 15 January 2024 Shareholder General Meeting and not yet issued
[2] At 37c per share as at 15 January 2023

Director and Employee Shareholdings		
Oleg Vornik, CEO and Managing Director	10,456,038 shares	1.68%*
Peter James, Independent Non-Executive Chairman	6,532,030 shares	1.05%*
Jethro Marks, Independent Non-Executive Director	1,292,901 shares	0.21%*
Other Employees	28,105,856 shares 5,770,000 options	5.44%*

Notes: Percentages are on a fully diluted basis. Excludes 19.5m Performance Options approved at the 15 January 2024 Shareholder General Meeting and not yet issued

Research Coverage

BELL POTTER

PELOTON CAPITAL

A security guard of Brazil's presidency uses DroneGun Tactical against a drone that was flying near the Planalto Palace and the National Congress in Brasilia, Brazil, January 8, 2024 at the Brazil Presidential Inauguration

Industry and Media Recognition

ASX-listed DroneShield wins US Defence contract

Matthew Cranston
United States correspondent

Oct 5, 2022 – 6.04am

Washington| ASX-listed anti-drone technology company DroneShield has won a $1.8 million contract with the US Department of Defence and says the win will open doors to significantly larger contracts with the world's biggest military.

In what is the company's largest US sale to date, DroneShield will provide dozens of DroneGun MKIIIs – a two kilogram pistol that sends a signal which neutralises an attacking drone or drone swarm.

RELATED QUOTES

DRO $0.170 ▲3

1 year 1 day

0.315

0.225

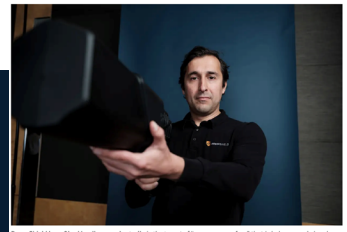
Tess Bennett
Technology reporter

Aug 9, 2023 – 1.32pm

Save Share

The CEO of an Australian company that builds rifle-like devices that force drones out of the sky says investors should overcome ethical concerns and get behind the defence industry because rising global tensions mean World War III is likely in our lifetimes.

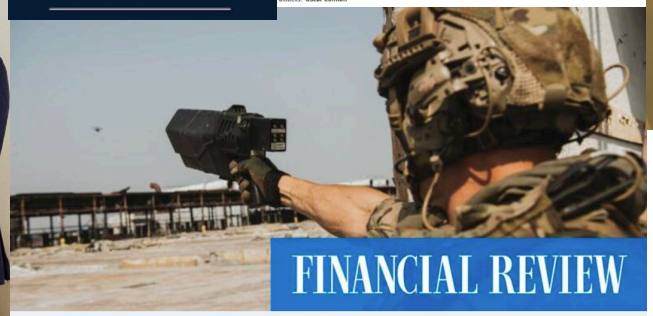
Oleg Vornik, chief executive of ASX-listed DroneShield added that although his drone guns don't hurt people or even the flying robots they bring down, Australia needs to be as self-reliant as possible, which meant building a strong private defence industry.



DroneShield boss Oleg Vornik warns Australia is the target of "grey-zone warfare" that is being waged via cyber attacks. Oscar Colman

DroneShield (ASX:DRO) selected for ISREW panel

FINANCIAL REVIEW 100 FAST



FINANCIAL REVIEW

The Aussie 'drone gun' bringing Mexican cartels down to earth

Shares soar as US government buys up Aussie company's anti-drone tech

Nick Bonyhady
Technology writer

Jul 17, 2023 – 5.13pm

Save Share

Shares in ASX-listed defence technology company DroneShield have soared 19 per cent, after it struck a $33 million deal to sell equipment to the United States Department of Defence, underscoring the importance of the versatile unmanned vehicles to modern warfare.

DroneShield makes systems that stop drones from communicating with

RELATED QUOTES

DRO $0.220

1 year 1 day

0.420

FINANCIAL REVIEW

Homegrown defence company helping Ukraine take out Russian drones

afr.com • 1 min read

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DRONESHIELD

Artificial Intelligence For Multi-Mission Threat Protection and C-UAS Defence

DroneShield Limited (ASX:DRO)
Investor Presentation

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