





Anti-drone products and technologies | A first-mover in a global industry | Sydney, Australia and Virginia, USA ASX:DRO (shares) and ASX:DROO (options)

**Investor Presentation | March 2018** 

### THE ISSUE



- Jan 2018: a swarm of 13 homemade, presumably ISIS, <u>drones</u> <u>simultaneously attacked two Russian military installations</u> in Syria an air base and a naval installation
- Nov 2017: The U.S. Department of Homeland Security issued <u>a</u> terror bulletin focusing on the threat of weaponised drones
- Nov 2017: A <u>drone struck an Aerolinas Argentinas passenger</u> <u>Boeing</u> on final approach to Buenos Aires Airport in Argentina, and the passenger jet sustained damage
- Oct 2017: Footage uploaded to YouTube reportedly showed <u>an</u> <u>armed ISIS drone destroying an arms depot</u> in northern Syria
- Sep 2017, Washington Examiner: Former Secret Service agent: drone "swarm attacks" pose "grave threat" to President Trump. Terrorists have considered drones "for a long time," and "the real threat comes from the more spectacular swarm attacks."
- May 2017: General Raymond Thomas, head of U.S. Special Operations Command, said small ISIS drones were the "most daunting threat" his troops faced in Iraq and Syria in 2016. He recalled once during the battle for Mosul when the coalition forces' "effort nearly came to a screeching halt" because the sky was filled with buzzing robotic aircraft. "At one point there were 12 killer bees, if you will, right overhead... and our only available response was small arms fire."



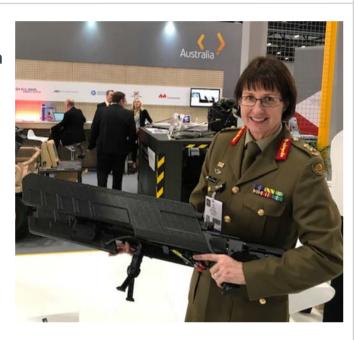




# DRONESHIELD AT A GLANCE



- ► Based in Sydney (Australia) and Warrenton (Virginia, USA), DroneShield (ASX:DRO) is a worldwide leader in drone detection and countermeasure solutions
  - Current market capitalization of approximately A\$40m
- ► An established player in the market
  - ► Has made early international sales
  - Limited number of readily-available competing products
  - Land grab is on, significant first mover advantage
  - ▶ Global network of 60 distributors in 50 countries
- ► Complete drone defense solution products are available today
  - DroneGun portable rifle style drone jammer
  - ▶ DroneSentinel the most extensive drone detection product in the marketplace with radar, RF, thermal, optical and acoustic sensors working together
  - ► DroneSentry DroneSentinel with a built-in drone jammer
- Proprietary, patented technology



Major General Kathryn Toohey (Head of Land Capability of the Australian Army) with DroneGun MKII in September 2017

# **DRONESHIELD AT A GLANCE (CONTINUED)**



- ▶ Multiple end-user trials have been and are being undertaken by governmental organizations globally
  - ▶ Products have been modified in response to end-user requirements
- Substantial sales pipeline approximately 90 contracts pursued globally, ranging up to US\$45,000,000 each\*
  - Including the U.S., the UK, Australia, France, South Korea and Spain
  - Well positioned in competitive tenders, and direct non-competitive sales processes with military, law enforcement, civil infrastructure and head of state/presidential customers
- ► Order rate accelerated this quarter
  - Sales processes of the recent year started producing results
- Attracted interest of large defence companies and security integrators
  - Mesirow Financial is running a strategic option process



South Korean military reviews DroneGun MKII

<sup>\*</sup> This slide refers to DroneShield's sales pipeline and specific sales opportunities. However, the potential sales opportunities listed may or may not result in sales and, necessarily, not all (and there can be no assurance that any) of these sales opportunities will result in sales.

## **DRONEGUN - COMPETITIVE ADVANTAGES**



- Universally targets a wide range of drones:
  - Effective against majority of known commercial drones on the market today
  - Avoids "arms race" with drone manufacturers
  - ▶ Does not require a separate "hack" program for each individual drone type
- ▶ Safe and effective solution for neutralizing the threat of drones:
  - ► Effectively removes the ability for pilot and drone to communicate within expected distance ratios from DroneGun operator
  - Once "jammed" the most common on board responses of commercial drones is to either fly back to starting point, reduce elevation and hover, or land vertically on the spot in a controller manner
  - ► The drone does not drop down unlike kinetic or net-based systems, which could create casualties and/or property damage if the drone is carrying a dangerous substance or falls on a person or an object



French President Emmanuel Macron inspecting DroneGun Tactical at Army Camp Mourmelon

# **DRONEGUN – COMPETITIVE ADVANTAGES (CONTINUED)**



#### ► Significant range coupled with precision:

- ▶ 1-2km effective range (dependent on the model)
- ▶ Directional jamming more effective vs omni jammers, no unnecessary 360 degree signal pollution

#### Benefits:

- ▶ Portable can be easily carried by a single person
- ▶ Gun shape: greater appeal to military and law enforcement than a "box with antennas"

#### **▶** Multiple DroneGun Products

- ▶ DroneGun MKII includes a backpack with a 2 km range
- ▶ DroneGun Tactical offers an even lighter, more portable model with no backpack and a 1 km range





DroneGun MKII

DroneGun Tactical

# **DRONESENTINEL AND DRONESENTRY**











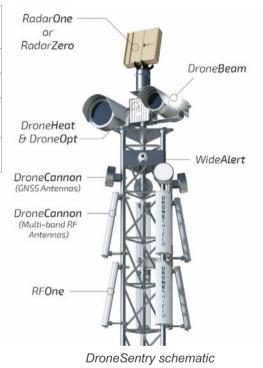


# DRONESENTINEL / DRONESENTRY - COMPETITIVE ADVANTAGES



RadarOne or RadarZero	RadarOne: 360 degree, 2D radar with detection up to 1 km		
Radai Olie Ol Radai Zei O	▶ RadarZero: 120 degree, 3D radar with detection up to 850 m		
RfOne	<ul><li>360 degree RF, detection up to several km away</li></ul>		
WideAlert and FarAlert	<ul> <li>Acoustic detection up to 500m away, as well as at close range</li> </ul>		
DroneOpt, DroneHeat,	Optical and thermal cameras		
DroneBeam	Optical and thermal cameras		
DroneCannon	Directional jamming, integrated with detection		

- ► The only product with these multiple detection methods
- Non-line of sight detection
  - Detects drones behind objects (via RF and acoustic sensors)
- ► Night-time detection
  - ▶ Via RF, acoustic, thermal and optical (with DroneBeam support) sensors
- Low flight detection
  - Drones can fly very low, barely over the fence lines
- Detection range
  - ▶ Up to 1km detection via RadarOne and RfOne sensors
- ► Effective coverage area
  - ▶ 360 degrees horizontally for RadarOne, RfOne, and WideAlerts no cueing needed
- ► False alarms reduced through multi-sensor detection
- ► Markedly less expensive than any comparable product



## HIGH PROFILE ORDERS / INSTALLATIONS



#### 1. Boston Marathon (2015-2017)

Deployed by the Boston Police Department as the exclusive drone security provider of the event for three straight years

#### 2. Special Forces of a G7 NATO Country

- Deployment against ISIS and other terrorist organizations
- ✓ Intended as an initial in-field evaluation unit for a larger order

#### 3. Asian Homeland Security

✓ In-field evaluation order for protection of sensitive government buildings of a major Asian country

#### 4. 2017 Hawaii IRONMAN

 Deployed counterdrone security throughout the 141 mile course

#### 5. 2018 U5G Marine Corps Exercise

- ✓ U.S. Marines hold this exercise to evaluate new technologies for subsequent acquisition and deployment considerations
- ✓ DroneShield selected from a large number of applicants

#### 6. Paraguay Government Tender

Evaluation unit purchased by the military

#### 7. Dutch DroneSentinel Order

- ✓ The first order for the DroneSentinel was announced on March 5, 2018 for approximately A\$200,000+
- ✓ The order was the first to incorporate the RadarZero

#### 8. 2018 Commonwealth Games

- ✓ Will deploy multiple DroneGuns throughout the 12 day event
- Approximately 6,600 athletes from approximately 70 countries participate in the games

Proven Product and Technology Platform as Evidenced by High-Profile Customer Installations

# **SELECTED RECENT ANNOUNCEMENTS**



11 Oct 2017	► Appointment of Mesirow Financial
17 Nov 2017	DroneGun Wins Paraguay Government Tender
27 Dec 2017	DroneGun MKII Certified for Human Exposure
29 Jan 2018	▶ 2018 U5G Marine Corps Exercise
31 Jan 2018	DroneShield releases DroneGun Tactical product
1 Feb 2018	➤ SOFWERX ThunderDrone RPEII Event
2 Feb 2018	Paraguay Government Tender
7 Feb 2018	DroneShield Rolls Out Revolutionary Compact Radar
14 Feb 2018	► DroneShield Assigned a NATO Stock Number for DroneGun
19 Feb 2018	▶ United States / Canada Joint Certification Program DD2345
22 Feb 2018	Appendix 4E and Annual Report
28 Feb 2018	► Statement by The Queensland Police Service
5 Mar 2018	First DroneSentinel Order / European Demo Hub
5 Mar 2018	► Statement on French Media Reports

# LARGE ADDRESSABLE MARKET WITH NUMEROUS END USER APPLICATIONS



- > The commercial and consumer drone market is growing rapidly and propelling the need for drone detection and countermeasure products and solutions
  - It is expected that over \$100 billion will be spent on drones (consumer / commercial / military) over the 2016 2020 period<sup>[1]</sup>
  - ► The global market for counter-drone technology is expected to grow to an estimated \$1.9 billion by 2024<sup>[2]</sup>
- The Company's products and technology have numerous end market applications, including both military and commercial uses
  - Management estimates that there are over 300,000 potential customer facilities worldwide
- DroneShield believes that a targeted sales and business development effort geared towards military customers should yield the most substantial near-term results and help the Company achieve traction in many of its other identified end markets

# Military



**Airports** 

(42,000 globally)



#### **Law Enforcement**



**Special Events** 

(11,000+ outdoor stadiums)



#### **Critical Infrastructure**

(including 65,000 powerplants)



**Commercial Venues** 

(including 41,000+ hotels)



#### **Prisons**

(20,000 globally)



**VIP Residences** 

(200,000+ high net worth individuals)



DroneShield Initially Focusing on Military Markets Within a Large and Growing Number of End Markets

[1] Source: Goldman Sachs Research

[2] Source: Grandview Research

# HIGHLY EXPERIENCED SALES TEAM WITH A GLOBAL DISTRIBUTION NETWORK



- The DroneShield sales team is an accomplished, competitive and entrepreneurial group with a proven track record of success
  - The Company also utilizes independent sales contractors (non-salaried) to more effectively cover business development opportunities
- The Company has a number of high-value opportunities presently in the pipeline, which are diligently monitored by management and the sales team

#### The DroneShield Sales Advantage

- Technical Knowledge: The DroneShield sales team is well-versed in the products and technology they sell. All sales employees have strong aerospace and defence backgrounds (along with prior military / law enforcement experience) and possess expert level knowledge of the Company's product and technology portfolio. Consequently, all sales personnel are able to utilize a highly-effective consultative approach to business development
- Competitive / Entrepreneurial: DroneShield has created a competitive and entrepreneurial environment for sales personnel to succeed and has created a compensation structure that properly incentivizes sales personnel to maintain existing accounts while cultivating new prospective customers
- ✓ Established Global Distributor Relationships: The Company maintains relationships with over 60 distributors located in over 50 countries

#### **Global Distribution Network**



= DroneShield's Distribution Network

#### **Sales Team Overview**



Casey Betzold VP Sales

- √ 15 years U.S. and international sales experience
- Global experience with defense and outdoor industries
- Previously worked in sales and business development for ATK and Beretta
- ✓ Captain (Ret), U.S. Air Force
- ✓ Mr. Davis joined DroneShield in December 2017
  ✓ Mr. Davis is responsible for driving business
  - development and sales in the U.S. military and government market
  - ✓ Secret Clearance

VP Sales

# ADDITIONAL CORPORATE CONSIDERATIONS



- ► The counter-drone industry has a number of similarities to well-established sectors like the pharmaceutical and oil & gas industries:
  - Large established companies limit investment in R&D to enhance short-term profitability
  - Larger defence "primes" partner with or acquire smaller companies as they start to develop traction in the market place
- DroneShield has received strategic interest from a number of industry players including global defence companies:
  - Ongoing negotiations with a number of large companies in the United States, Japan, United Kingdom, Germany, France, Israel and Sweden
  - Partnerships expected to open new sales channels and further validate DroneShield's product portfolio
- ► Mesirow Financial, a 600-person U.S. investment bank with a specialty in aerospace and defence, retained to assist with corporate opportunities.\*
  - Several large companies have signed confidentiality agreements and proceeded into the second round of discussions.

<sup>\*</sup> There can be no assurance that the process referred to in this announcement will result in any transaction or strategic option being implemented, or any assurance as to the outcome or timing of any of the foregoing.

# CAPITAL STRUCTURE



- ▶ 1,200 shareholders
- ▶ A\$7.2 million in market liquidity over the recent 12 months

Shareholders	Shares (ASX:DRO)	Listed Options (ASX:DROO)	Performance Shares and Unlisted Options
Shareholders	156,395,893	34,478,988	45,000,000
Options	-	-	30,200,000
Total	156,395,893	34,478,988	75,200,000

Enterprise Value				
DRO shares	A\$0.26 / share*	A\$40.6m		
DROO options	A\$0.03 / option*	A\$1.0m		
Cash	As at 31 Dec 2018	(A\$2.4m)		
Debt	As at 31 Dec 2018	nil		
Enterprise Value	Excluding unlisted options	A\$39.2m		

<sup>\*</sup> As at 8 March 2018

#### **Share Price and Trading Volume - Since IPO** 10 Jan 17 – U.S. 24 Apr 17 - Pan-24 Jul 17 – Quarterly 14 Feb 18 – first Asian security update highlighting DroneSentinel Order / government European Demo Hub DroneSentinel and agency testing integrator test order DroneSentry partnership 14 Feb 18 -2 Jun 17 -0.50 Assigned 5,000 **Engages Cassidy** NATO stock to assist with US | 11 Oct 17 -7 Jan 17 – number for DailyMail reports federal market **Appointment** 4,000 DroneGun Boeing 737 collides of Mesirow with drone Financial 11 Nov 17 – 0.35 . 3,000 5 Dec 16 – First DroneGun DroneGun wins Paraguayan 2,000 announcement

## **BOARD OF DIRECTORS**



#### Peter James, Independent Non-Executive Chairman



Mr. James has over 30 years' experience in the Technology, Telecommunications and Media Industries, and has extensive experience as Chair, Non-Executive Director and Chief Executive Officer across a range of publicly listed and private companies. He is currently Chair of ASX-listed companies nearmap, Macquarie Telecom, UUV Aquabotix and Dreamscape Networks.

Mr. James has recently completed 12 years as a Non-Executive Director for ASX-listed iiNet, Australia's second largest DSL Internet Services Provider, chairing iiNet's Strategy and Innovation Committee. iiNet was recently acquired by TPG Telecom for AUD \$1.56b.

He travels extensively reviewing innovation and consumer trends primarily in the U.S. and also Asia and he is a successful investor in a number of Digital Media, e-commerce and Technology businesses in Australia and the U.S.

Mr. James is an experienced business leader with significant strategic and operational expertise. He is a Fellow of the Australian Institute of Company Directors, a Member of the Australian Computer Society and holds a BA Degree with Majors in Computer Science and Business.

## Oleg Vornik, Chief Executive Officer and Managing Director



An experienced senior executive with investment banking and treasury experience at the Royal Bank of Canada, Leighton Contractors, Brookfield, Deutsche Bank and ABN AMRO.

Mr. Vornik was the Chief Financial Officer of DroneShield prior to his appointment as CEO and MD. Prior to DroneShield, he was an investment banker with the Sydney office of the Royal Bank of Canada, and held roles with Brookfield Asset Management, Deutsche Bank and ABN AMRO in Australia and New Zealand as well as the position of a Treasurer at Leighton Contractors.

Mr. Vornik holds a BSci (Mathematics) and BCom (Hons) from University of Canterbury, New Zealand and has completed a business program with Columbia University in New York.

# **BOARD OF DIRECTORS (CONTINUED)**



#### Bradley Buswell, Independent Non-Executive Director



Mr. Buswell, based in Washington, DC, brings to the Board extensive experience in successfully leading businesses and U.S. government agencies.

From September 2013 to July 2015, Mr. Buswell was president of the North Americas division of Rapiscan Systems, Inc., a world leader in state of the art security screening products, services and solutions. Amongst other initiatives, Mr. Buswell led the launch of the Real Time Tomography product line, ensuring U.S. government certification of the technology for aviation screening and securing the first competitive contracts for installation in European airports. Before joining Rapiscan, Mr. Buswell served as President and CEO of Morpho Detection, Inc. (previously General Electric Homeland Protection prior to being acquired by Safran, a French aerospace and defense company) from July 2010 to July 2013. Mr. Buswell developed and implemented a growth-targeted strategy for Morpho Detection, translating global security needs into a market leading products and services portfolio through internal investment and strategic acquisitions.

Mr. Buswell joined Morpho Detection from his previous role at the United States Department of Homeland Security as Deputy Under Secretary for Science and Technology where he led a 1,200 person staff in the development of technologies in support of DHS operating components including the Transportation Security Administration, Customs & Border Protection, the U.S. Secret Service and the Federal Emergency Management Agency, as well as state and local first responders. Following that role, he served as the acting Undersecretary during the first year of the Obama administration.

Mr. Buswell's previous experience includes over 20 years as a submarine officer in the U.S. Navy where he served in a variety of assignments including Congressional Liaison for Navy R&D programs at the Navy Office of Legislative Affairs and Chief of Staff at the Office of Naval Research. Mr. Buswell graduated from the U.S. Naval Academy with a Bachelor of Science in Systems Engineering, and the George Washington University with a Master of Business Administration.

#### Robert Clisdell, Non-Executive Director



Mr. Clisdell is based in Sydney and is the Vice-President at Bergen Capital (Australia) Ltd, an affiliate of the Company's largest shareholder.

Prior to Bergen, Mr. Clisdell led the middle market corporate advisory practice for Credit Suisse's Private Bank in Melbourne. Prior to Credit Suisse, Mr. Clisdell was an M&A banker with Caliburn Partnership (now Greenhill & Co.) in Sydney, and worked in Equity Capital Markets at Ord Minnett Corporate Finance. Mr Clisdell began his career with Arthur Anderson and qualified as a Chartered Accountant in 2005. He holds a Bachelor of Commerce from the University of Sydney and a Graduate Diploma in Applied Finance from FINSIA.

### **MANAGEMENT**



#### Simon Woodward, Chief Technology Officer



A diverse engineering skillset, with leadership experience in large scale technological implementation projects across hardware and software platforms.

Mr. Woodward previously held a number of high profile technical and engineering roles in communications and banking industries in Australia and Europe. He was also the founder of several businesses including Wholesale Communications Group, which rapidly become the largest non-retail telecommunications provider in Australia before being acquired by ASX-listed M2 Group Limited (ASX:MTU). Simon has studied Material Engineering, Physics, IT and Computer Science at the University of Wollongong. Simon is certified in PRINCE2 project management.

#### John Franklin, Chief Scientific Officer



Mr. Franklin holds a M.Sc. in Applied and Computational Math from Johns Hopkins University.

Previously, he was a member of the research staff at the Air and Missile Defense Sector at Johns Hopkins University Applied Physics Laboratory, and Adjunct Research Associate (Science and Technology Division) at the Institute for Defense Analyses.

# **MANAGEMENT (CONTINUED)**



#### Claire Newey, Chief Financial Officer



An experienced Chartered Accountant with 12 years of international financial reporting, management and advisory experience, across public and private companies spanning various industries.

Prior to joining DroneShield, Ms. Newey was Group Finance Manager with GrainCorp (ASX 100). She has previously worked at Deloitte (Sydney and London) as a Director and with global chemical group Adama, as Chief Financial Officer for Switzerland and European Financial Controller.

#### Albert Newell, General Counsel



Mr. Newell is an experienced legal and international compliance leader in the U.S. defense and IT sectors.

Mr. Newell previously worked for DXC Technology as the Global Compliance Lead where he oversaw the Anti-Bribery, Global Trade and HIPAA compliance programs. In that role, Mr. Newell coordinated regulatory correspondence, licenses, disclosures and acted as the ITAR and FCPA subject matter expert for the DXC legal department.

Prior to his tenure at DXC, Mr. Newell spent six years at BAE Systems where he was a compliance officer specializing in export control and third party due diligence.

Mr. Newell holds a BA from the University of Colorado, Colorado Springs; a Juris Doctor of Law degree from the Catholic University in Washington DC and is an active member of the Virginia State Bar.

#### Alistair McKeough, Company Secretary



Mr. McKeough is a solicitor and is Managing Director of Whittens & McKeough, a Sydney based law firm specialising in corporate and commercial law. Mr. McKeough is an experienced company secretary, having served in that role for many public companies.

Prior to founding Whittens & McKeough in 2010, Mr. McKeough worked at international law firm Herbert Smith Freehills and was an Associate to a Judge of the Federal Court of Australia. Mr. McKeough was appointed Company Secretary of DroneShield on 28 November 2017. Mr. McKeough holds a BA (English and History) from the University of Sydney and an LLB and LLM from the University of New South Wales.

# WHY INVEST IN DRONESHIELD



- ▶ A brand new, cutting-edge industry at the forefront of the robotics revolution
- ► A leader in that industry
- ► Unique proprietary products
- ► A huge and untapped market
- ► A skilled and motivated team
- ► Ability to sell has been validated by early prior sales
- ► An extensive sales pipeline expected to produce short-term results
- ▶ Potential for substantial partnerships and other corporate developments given the interest in the industry on the part of larger players



# **APPENDIX**





# **Product Description**

- A portable drone signal jammer offers a safe countermeasure against a wide range of drone models and controlled management of drone payload such as explosives
- DroneGun does not cause any damage to common drone models or the surrounding environment
- Current model requires a backpack and DroneGun
  - The next iteration of the DroneGun will only require the rifle (rather than a backpack and a rifle like the first model)
- The DroneGun affects frequencies at 2.4 Ghz, 5.8 Ghz and GPS/GLONASS (optionally)



# Product Features

- Uses two Lithium-Ion V-Mount batteries with up to two hours of battery life with continuous use
  - Batteries have a charging time of four hours
- Operating temperature: -10°C to +55°C
  - Battery warmers are available for colder climates although drones generally don't fly in adverse weather conditions
- 12 month warranty from the date of shipment
- Dimensions: 93.3 cm x 26.1 cm x 19.1 cm





**DroneGun Tactical** 



# Product Description

- DroneGun Tactical is a fully integrated rifle style, safe countermeasure against a wide range of drone models
- The design allows it to be highly portable and is capable of disrupting multiple RF frequency bands simultaneously
- DroneGun does not cause any damage to common drone models or the surrounding environment
- This product does not require a backpack, increasing portability
- The DroneGun affects frequencies at 2.4 Ghz, 5.8 Ghz, 433 Mhz, 915 Mhz and GPS/GLONASS (optionally)



- DroneGun Tactical weight: 15 lbs (6.8 kg) including two batteries
- Range: Up to 0.62 miles (1.0 km)
- Uses two Lithium-lon, rechargeable batteries with 30+ minutes of operating time with continuous use
- Operating temperature: -20°C to +55°C
  - Battery warmers are available for colder climates although drones generally don't fly in adverse weather conditions
- 12 month warranty from the date of shipment
- Dimensions: 104.1 cm x 41.0 cm x 12.2 cm









**DroneSentry** 

# Product Description

- DroneSentry integrates DroneShield's full suite of sensors and countermeasures into a unified platform deployable in permanent or temporary installations
- DroneSentry analyzes data and provides maximum situational awareness and the quickest response to airborne threats
- DroneSentry also includes the DroneCannon RF countermeasure and DroneBeam optical range extender & disruptor, which provides end-to-end detection and response capabilities
- False alarms reduced through multi-sensor detection

# Product Features

- Nominal UAS detection ranges
  - RfOne: up to 5 km
  - RadarOne: 1 km
  - RadarZero: 850 meters
- Nominal UAS identification ranges
  - WideAlert: 200 meters
  - DroneHeat & DroneOpt: 600 m for small drones, 1.5 km for large drones
- DroneCannon engagement range: up to 1 km
  - Can be factory modified for improved range
- Can provide IP-based alerts (email, SMS, XML/JSON), mobile alerts, radio frequency audible alerts and DroneShield User Interface
- Stand-alone dimensions: 7.2 meters tall and 1.8 meters wide



**DroneSentinel** 

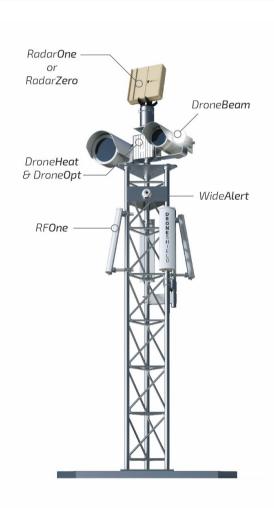


# **Product Description**

- DroneSentinel utilises the fully integrated sensor suite of DroneSentry without the DroneCannon RF countermeasure capability
- Consolidates data from all available sensors (users can rapidly detect and assess potential threats)
- An intuitive user interface provides live and historical data from all sensors, and broadcasts configurable alerts based on user-defined criteria.

# Product Features

- Nominal UAS detection ranges
  - RfOne: up to 5 km
  - RadarOne: 1 km
  - RadarZero: 850 meters
- Nominal UAS identification ranges
  - WideAlert: 200 meters
  - DroneHeat & DroneOpt: 600 m for small drones, 1.5 km for large drones
- Can provide IP-based alerts (email, SMS, XML/JSON), mobile alerts, radio frequency audible alerts and DroneShield User Interface
- Stand-alone dimensions: 7.2 meters tall and 1.8 meters wide
  - The height and mounting of the system depends on the location and environment





DroneSentry and DroneSentinel Modules



- RadarOne provides rapid and precise tracking of airborne targets with 360 degrees of horizontal coverage and 40 degrees of vertical coverage
- The product is suitable for mobile and permanent installations and can be deployed in minutes
- Long range tracking capabilities at ranges up to 1 km
- Supports automatic tracking of airborne targets and can display 500+ tracked targets simultaneously
- Can be configured remotely via DroneShield's software system



# RadarOne

- RadarZero is a revolutionary compact drone detection radar product released in February 2018
- At roughly the size of a paperback book, the product can detect drones up to 850m away and sells for a fraction of the cost of the larger longer-range more conventional radars

#### RadarZero

- Resultant portability and mobility
- Weight: 1.25 kg
- Dimensions: 20 cm x 16 cm per unit
- 120 degree azimuth coverage and 80 degree vertical coverage per unit
  - Complete coverage achieved through 4 units without requirement for mechanical movement
- 3D data acquisition





DroneSentry and DroneSentinel Modules (continued)(1)

DroneHeat and DroneOpt

- DroneHeat & DroneOpt offer thermal video feed with 10x optical zoom and HD color video with 30x optical zoom enabling the human to both detect and verify drone threat events
- Thermal and video outputs
- Long range verification enables security teams to visually verify the existence of a drone up to 1.5 km away
- Pan and tilt speed: 50°/second
- Tilt range: +90° to -90°
- Temperature range: -40°C to +60°C



RfOne

- DroneShield's RfOne provides reliable RF detection over 15° vertical field of coverage and 360° horizontal field of coverage using 4 x 90° sector antenna panels
- Can passively detect drone radio frequency emissions up to 5 km away
- RfOne can distinguish between non-drone RF activity within certain frequency bands





DroneSentry and DroneSentinel Modules (continued)(1)

# Drone Cannon

- DroneCannon provides jamming coverage over 16° vertically and 360° horizontally using 3 x 120° units
- DroneCannon can be factory-modified to accommodate shorter or longer ranges, as required by the customer
- Drones are forced to ground at the point of jamming or return to their place of origin
- Jamming can interrupt a drone's navigation capabilities and force the drone to the ground in a controlled manner



#### **FarAlert**

- FarAlert sensors ensure drone surveillance capabilities are maximized with an extensive drone detection radius of up to 500 meters and 30 degrees of cone coverage
- A weather resistant product that can distinguish drone activity from common environmental noise
- Sensors can be configured remotely using DroneShield's software platform
- Weight: 15 kg
- Dimensions: 66 cm diameter x 26 cm





DroneSentry and DroneSentinel Modules (continued)(1)



- WideAlert sensors provide 120 degree cone coverage of local acoustic activity at close range
- Small and compact design allows for discreet deployment
- Weather resistant
- Environmental noise filtering capabilities
- Microphone can detect sounds up to 200 meters away
- Dimensions: 100 mm x 100 mm x 68 mm



WideAlert

 DroneBeam offers a 12 million candle power spotlight that greatly extends the engagement range of the attached DroneOpt camera

**DroneBeam** 

- Adjustable beam width and intensity
- 90 day lamp warranty all other components have a one year warranty

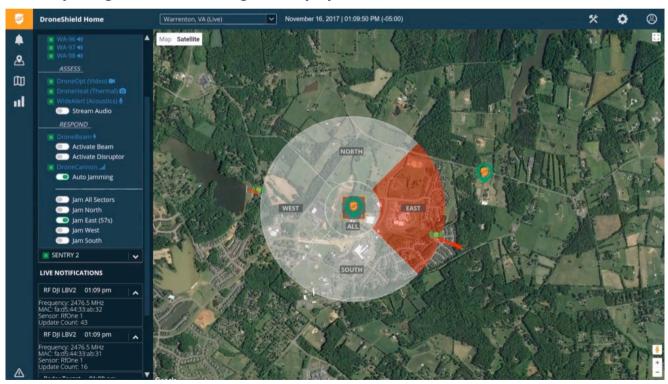




DroneSentry and DroneSentinel Modules (continued)(1)

Sensor Fusion Engine / GUI

- DroneShield's proprietary sensorfusion software system compiles and analyses the results collected from each type of sensor to dertect a drone and identify the type of drone
- Reports live, can be used for single multi-sensor sites or several multi-sensor nodes
- Integrated Platform delivering a low false-alarm rate and issues instant alerts through email, alarm systems, XML or dry contact relays
- Does not require an internet connection and is ideal for situations where an internet connection is not possible or desired in the field
- Easily integrates into existing security systems



# **CONTACT DETAILS**



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## IMPORTANT CAUTIONARY NOTE



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