



**DRONESHIELD**

## **Quarterly Report**

For the period ending  
30 June 2021



*Image: DroneSentry-X™ on a U.S. Navy vessel*

**DroneShield Limited (ASX:DRO)**

ASX Release

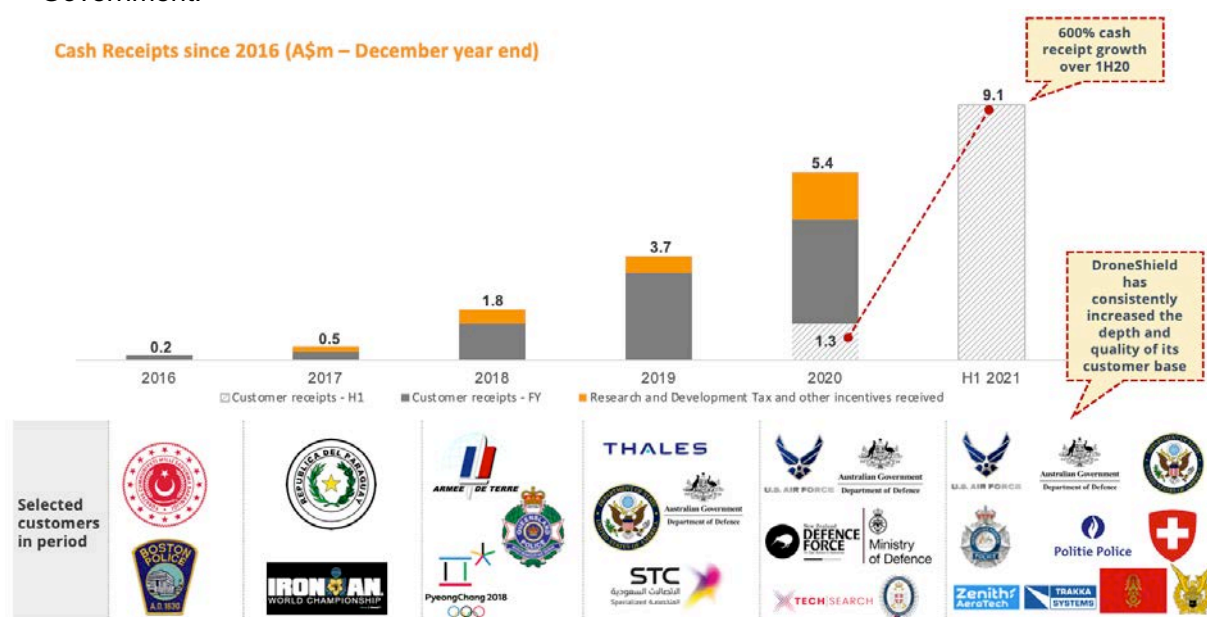
ABN 26 608 915 859

**DroneShield Limited (ASX:DRO)** ("DroneShield" or the "Company") is pleased to release its business update and Appendix 4C for the three-month period ended 30 June 2021.

## Highlights

- 2Q21 quarterly customer receipts of \$7.4 million, an all-time record, despite COVID slowdown.
- 1H21 cash receipts of \$9.1 million, a 600% growth over 1H20 cash receipts.
- \$3.8 million contract with Australian Department of Defence in Electronic Warfare/Signals Intelligence arena, including the first \$1.9 million initial payment received in June 2021.
- Active engagement on the US\$50 million Middle Eastern contract continues.
- Diversity in the quarterly cash receipts, including substantial Australian, US and Middle Eastern payments, across multiple product lines, as well as R&D work.
- Positive cashflow quarter, bank balance as at 30 June 2021 increased to \$14.2 million.
- \$200 million global sales pipeline, across number of key markets and products, in a \$6bn total addressable market.
- Substantial inventory acquisition process to mitigate supply chain delay risks. \$10 million of inventory by sale value on hand to meet near term pipeline requirements.
- DroneSentry-X™ on-the-go C-UAS system has successfully completed U.S. Navy, Department of Homeland Security and other key agency trials, along with successful UK MOD evaluations.
- Rapid scale-up of the team complete, at 50 staff globally, including engineering hires in Australia, and sales and field support hires in the US. Additional hiring continuing opportunistically.
- Highly favourable macro environment for DroneShield, with rapidly rising counterdrone expenditure globally, and ongoing increase in local defence capability by the Australian Government.

Cash Receipts since 2016 (A\$m – December year end)



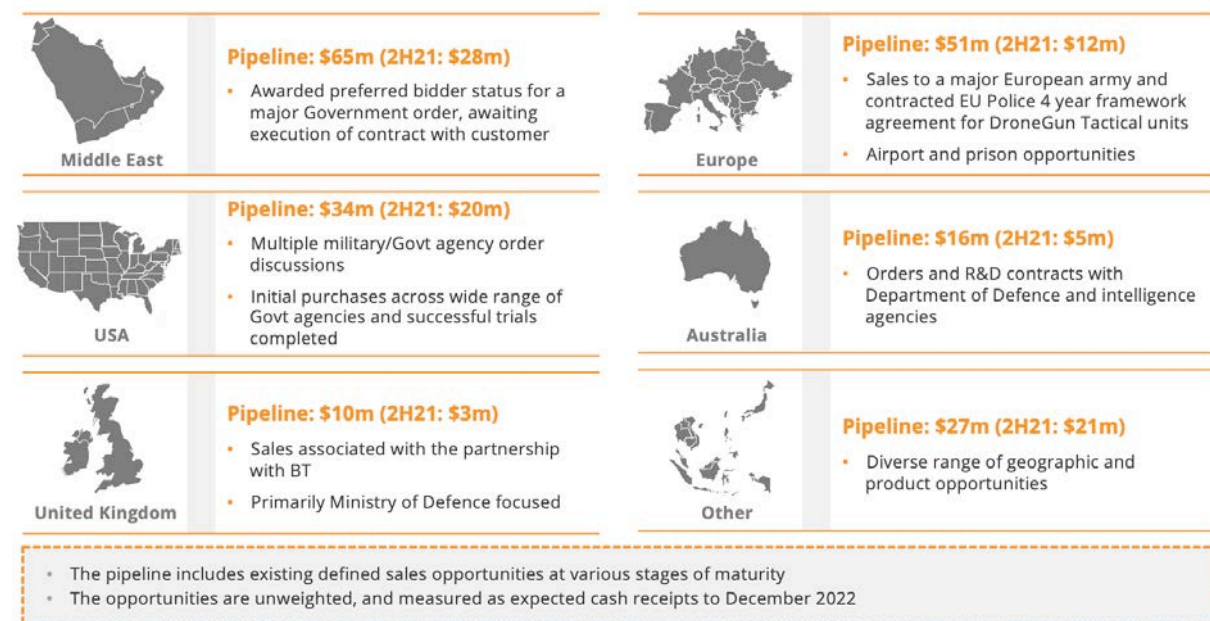
Note: R&D Tax and other grant incentives are expected to be substantially received in the September 2021 quarter

## Financial Performance and Outlook

- The record \$7.4 million cash receipts for 2Q21 came from a range of products and regions, reinforcing DroneShield's diversified business model.

Table: 2Q21 Key Cash Receipt Contributors		
Geography	Product	Cash Receipt Amount
Middle East	DroneGun Tactical	\$2.4 million
US (multiple customers)	DroneGun MKIII, RfPatrol, RfOne, R&D work	\$2.2 million
Australia	R&D contracts	\$2.1 million
Australia (multiple customers)	RfOne, RfPatrol	\$270k
Other (South East Asia, UK, Europe)	DroneGun MKIII, DroneSentry-X	\$470k
Total		\$7.4 million

The Company's sales pipeline is \$200 million<sup>1</sup>, distributed across geographies with a significant focus on the US, UK, Australia and the Middle East, as follows:



Notes: Quoted in Australian dollars. AUD:USD FX rate at 0.77. AUD:EUR FX rate at 0.64. AUD:GBP FX rate at 0.55

Figure: Sales pipeline geographic distribution

- Despite the substantial inventory investment and one-off expenses related to the scale up of engineering and sales teams, the Company's cash balance has increased to \$14.2 million during the quarter.
- At the macro level, Western and allied Governments continue to ramp-up their defence budgets in countering asymmetric warfare, which counterdrone forms a part of.
- The Company offers its products in over 120 countries through in-country partners and on-the-ground presence (in Australia, US and UK). Geographic diversity of pipeline is its strength.
- With a wide distribution network, a diverse product range and a history of orders from a variety of customers, DroneShield is not dependent on any one customer or any one contract for its success.

<sup>1</sup> Necessarily, not all, and there can be no assurance that any, of the Company's sales opportunities will result in sales.





*Image: DroneSentry™ deployed during the 2Q21 quarter*

***The United States Department of Defense and other U.S. government agencies***

- The United States government, through a wide variety of its agencies and departments, is the largest counterdrone customer globally.
- DroneShield has continued to be invited to, and participate in a number of system evaluations by a range of US Government agencies. There is no one entry point or influencer within the C-UAS market in the US. Due to the U.S. market size and the wide-ranging requirements for C-UAS, these trials and evaluations serve as pre-requisites for subsequent purchases by each primary agency.
- Several purchases were completed by and delivered to US Government agencies during the quarter, mostly across the portables sector, as the vehicle/ship and fixed site products are completing product evaluations.
- DroneShield has also continued to increase its presence and visibility within U.S. markets, which now includes a customer base that spans the U.S. Department of Defense, Federal and State level government, and commercial organisations and integrators.

- During the quarter, DroneShield continued to expand its US operations, in its new and larger US premises in Virginia. The Company has also continued to grow its US team, now consisting of 6 full time employees and 2 contractors across Sales, Field Service Engineering and Bid Response Writing.



*Image: US Department of Homeland Security DroneSentry™ trials*

- DroneSentry-X™ successfully completed a demonstration exercise with the U.S. Navy. The system was deployed on the Stiletto experimentation vessel for six weeks, successfully completing a range of performance and evaluation metrics.
- The system demonstrated overall detection capability, detection and defeat ranges, on-the-move operation in various sea states, and effectiveness against drone swarms, involving a wide range of unmanned robotic threats.



*Image: DroneSentry-X™ on the US Navy Stiletto vessel*

- DroneSentry-X™ is a high-performance detection and mitigation solution for a wide range of environments including ground mobility operations, maritime security and fixed-site base requirements. DroneSentry-X™ is powered by RFAI, DroneShield's cutting-edge AI/ML signal detection and classification engine, providing unparalleled performance in the C-UAS space. DroneSentry-X™'s open architecture and interoperability allows users to easily integrate DroneSentry-X™ with other solutions to further enhance existing mission systems or counter-UAS capabilities.
- The successful US Navy demonstration validates other recent DroneSentry-X™ evaluations by the U.S. Department of Defense, Department of Homeland Security, and both Federal and State Law Enforcement agencies.
- The Company has also continued to work with Cassidy & Associates, Inc. ("Cassidy"), a pre-eminent Washington, DC government relations firm, during the quarter, whereby Cassidy advises the Company on contracting with U.S. government agencies, contracts in connection with U.S. federal government budgetary allocations, and other U.S. federal government relations matters.
- With growing demand from top tier U.S. end users, DroneShield is in the process of setting up US manufacturing to streamline sales to the Company's US Government customers. It is still able to sell to the US customers meanwhile, with Australia being an exemption country to the "Buy American" Act.

#### ***Australian Department of Defence and other government agencies***

- Being an Australian business, DroneShield is well positioned for work with the Australian Department of Defence and other Government agencies.
- During the quarter, the Company successfully completed and received the remaining payments for the \$630,000 contract with the Department of Defence.
- DroneShield subsequently received a follow-on \$3.8 million, 2-year R&D contract with the Department of Defence, with \$1.9 million received in June 2021. The contract was awarded to DroneShield on a sole source basis.
- Importantly, the contract was not in the C-UAS, but Electronic Warfare and Signals Intelligence, an adjacent area utilising existing DroneShield skillset, but with much wider applications.
- Additional, and larger, contracts are expected with the Department of Defence, as DroneShield builds up its capabilities in the Electronic Warfare and Signals Intelligence arena<sup>2</sup>.
- As part of the engagement with the Department of Defence, as DroneShield is in the business of understanding, and minimising, defence and Government customer vulnerabilities, secret clearances are important for closer and more productive customer engagements as the Company scales its business.
  - The Company anticipates completing its Defence Industry Security Program ("DISP") process and becoming eligible for a defence clearance, in the current 2Q21.
  - Key DroneShield employees have already been granted DISP clearances.
- Australian Army has recently released images of DroneShield's equipment in their deployment, in a mobile configuration on a vehicle. These can be viewed [here](https://images.defence.gov.au/assets/Home/Search?Query=7%3AS20212105):  
<https://images.defence.gov.au/assets/Home/Search?Query=7%3AS20212105>

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<sup>2</sup> Necessarily, not all, and there can be no assurance that any, of the Company's opportunities will result in sales or R&D work.



- DroneShield continues to work with Hon Christopher Pyne, the 54<sup>th</sup> Australian Defence Minister, to deepen the Company's reach into the Australian and global defence channels.



*Image: Hon Christopher Pyne at the DroneShield stand at Land Forces 2021 exhibition, holding DroneGun MKII™*

### ***The Middle East***

- The Middle Eastern market represents a range of opportunities for the Company, across multiple countries and products.
- DroneShield received in mid-April, the remaining \$2.3 million for a shipment of the remaining DroneGun Tactical™ units under a prior Middle Eastern Ministry of Defence order.
- Completion of the contract demonstrated DroneShield's ability to navigate doing business in one of the most challenging yet most lucrative regions.
- It also highlighted the global leadership of DroneShield products, and its best-in-breed performance, as confirmed by this customer who faces daily UAS threats on their home soil.
- DroneShield continues to pursue the \$60 million to \$70 million<sup>3</sup> potential order, with a fully completed form of contract awaiting execution by the customer. DroneShield continues active engagement with the customer, to arrange execution of the contract.<sup>4</sup>

### ***Europe***

- DroneShield continued multiple deployments and trials through Europe, participating in a number of military, airport and prison opportunities.
- The Company expects new European orders, in the current quarter.

<sup>3</sup> Corresponding to US\$45-55 million.

<sup>4</sup> Necessarily, there can be no assurance that any of the Company's sales opportunities will result in sales. There is no assurance that the bid referenced in this paragraph will result in a sale



*Image: DroneSentry™ deployment in Europe*

### ***The United Kingdom – Partnership with BT***

- DroneShield continues its partnership with BT on its counterdrone pipeline.
- UK Ministry of Defence (“UK MOD”) continues to be the prime focus for the partnership, along with law enforcement and airport customers.
- DroneShield and BT have made substantial inroads within the UK MOD and other UK customers over the last 12 months, despite the COVID-19 slowdown.
- The Company (via its small UK team) and BT have now commenced extensive end user evaluations, as the UK emerges from the COVID lockdown, with trials going exceptionally well, including trials of the new DroneSentry-X™ system.
- DroneShield made several smaller trial sales in the UK during the quarter across multiple products.

### ***Airports***

- A number of airport agencies globally, including Federal Aviation Administration (“FAA”) in the US, provided updates on their C-UAS processes, showing active plans to deploy C-UAS.
- DroneShield expects to be included in every major airport procurement process, with a number of its products ideally suited for airport environments, due to their passive (non-emitting) nature, world leading detection range and low false alarm rate, ability to identify and track both the drone and its pilot, an extensive software suite that can be easily integrated with existing airport systems, and exceptional value for money.
- The U.S. Air Force Grand Forks base install provides an existing reference case for a military airport, alongside DroneShield’s Altenrhein (Switzerland) civilian airport reference.

### ***Inventory***

- The Company has continued to make a substantial investment in ready-to-ship inventory and long-lead parts for existing and future orders.



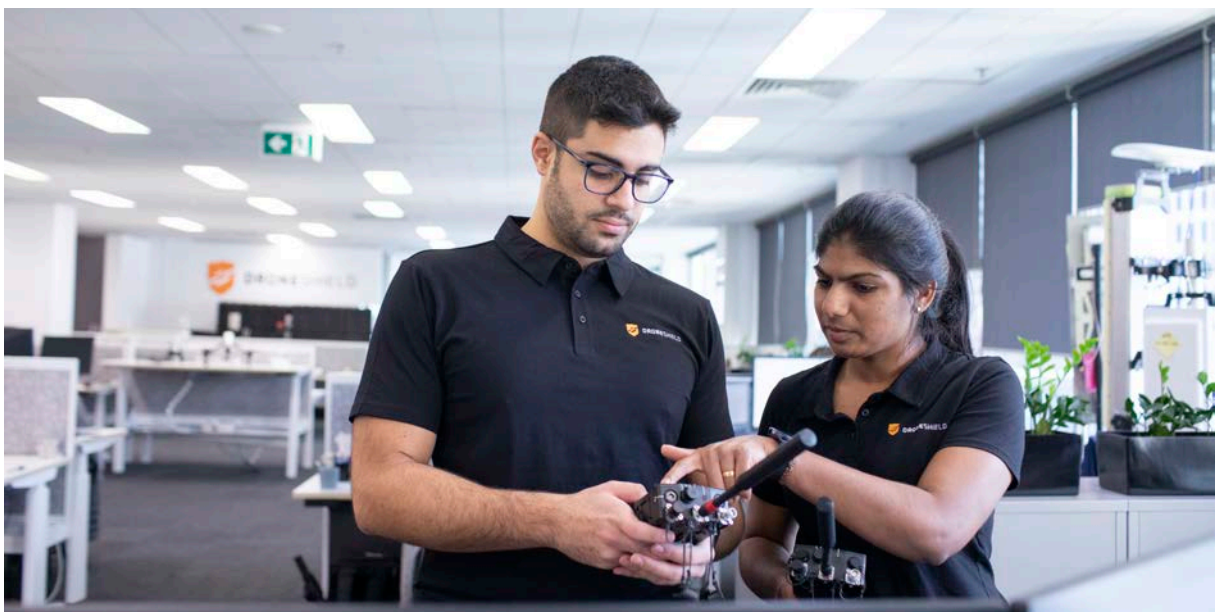
- Reducing delivery times, in an industry where the customer often requires an urgent deployment.
- Reducing component delay risks, highlighted by the reported global shortage in the semiconductor industry.
- Since January, DroneShield invested \$5 million in inventory, with the inventory balance as of 30 June 2021 corresponding to approx. \$10 million of sale value.

## Team and Operations

- DroneShield has completed its near-term hiring plan, with the team comprising of 50 staff - substantially engineers, sales and field support, and production technicians. The Company is continuing to recruit in its Australian and US offices, on an opportunistic basis.



*Image: DroneShield team at a test site*



*Image: Mino Bucci, RF AI Team Lead, with Tharshini Gunendradasan, AI Engineer*

- Continued outsourcing of larger production runs to an experienced defence manufacturing contractor in Adelaide (a fully Australian owned and operated medium size specialised electronics manufacturer).
- The manufacturer has completed initial large production runs (50-100 units), successfully working through the scalability considerations (the earlier production runs were of 10-20 units quantity).
- DroneShield continues to do its own manufacturing of smaller batches of its products (co-located with its main R&D premises in Sydney, enabling agile product refinement).



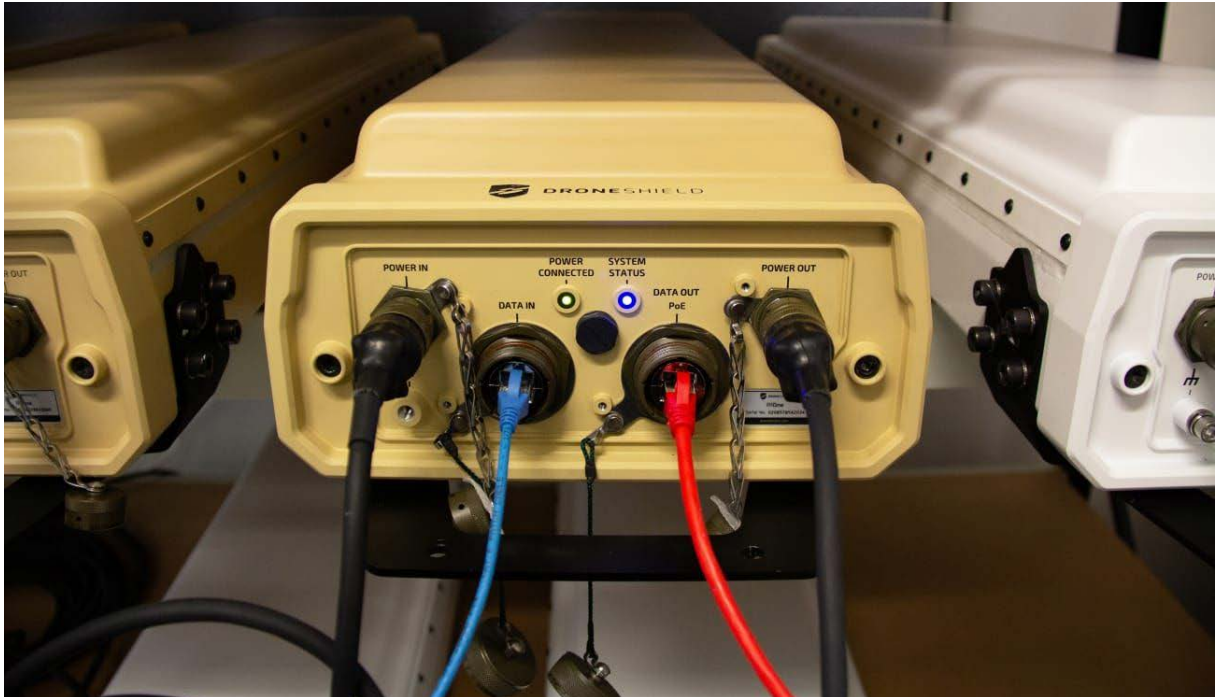
*Image: RfPatrol MKII™ units following final QC testing*



*Image: DroneSentry-X™ heatsinks during the manufacturing process*

- As DroneShield's product pricing starts from tens of thousands of dollars per unit (and up), having successfully undertaken production runs of 100-unit batches across multiple product lines, enables confidence in scaling capabilities, at its own and its outsourced facilities.
- The production processes are continuing in the current lockdown situation, in a COVID-compliant manner.





*Image: RfOne MKII™ units undergoing final QC testing*



*Image: DroneSentry-X™ prepared for shipment by the DroneShield team*



## Marketing

- While most trade shows continue to be postponed or held virtually due to COVID during the quarter, DroneShield participated in events which continued to go ahead, directly or via partners.
- This included the Australian Army Robotics Exposition (ARX) which was held in Brisbane on 20 April, and the Land Forces Expo, also in Brisbane, held 1-3 June, where the Company exhibited both in its own stand, and at the stands of its exhibiting partners.



Image: DroneShield CEO Oleg Vornik and Sales Director Red McClintock, with Hon Stuart Ayres, Minister for Jobs, Investment, Tourism and Western Sydney of New South Wales, at Land Forces 2021

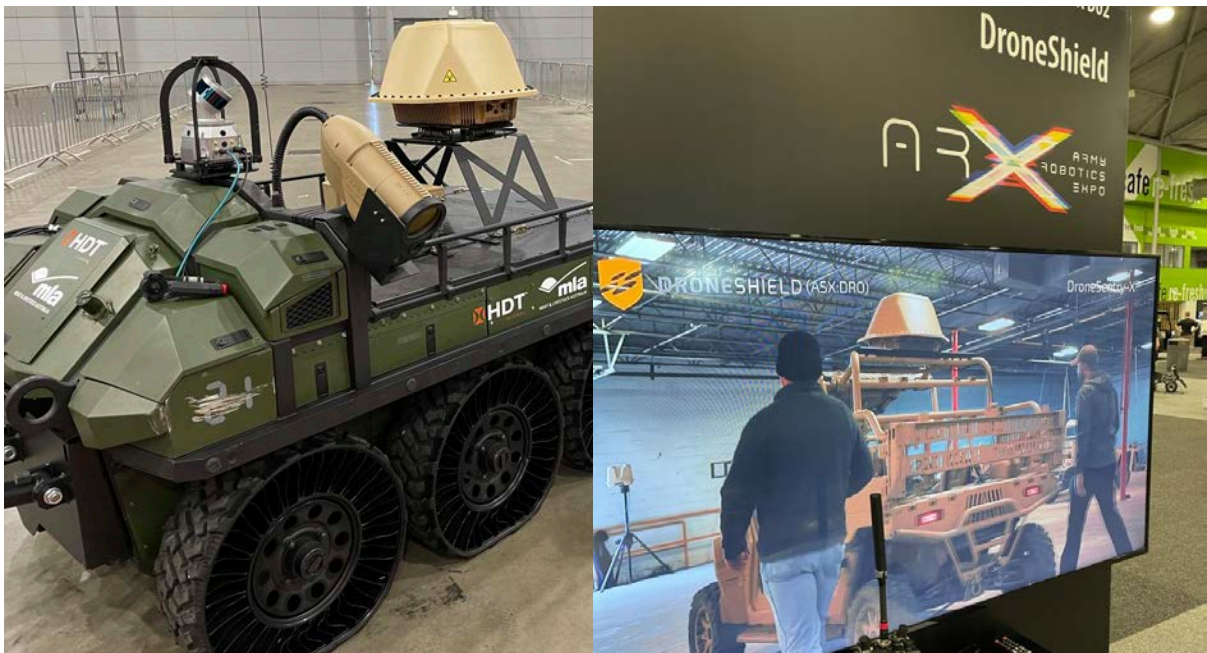


Image: DroneShield's DroneSentry-X™ system on an Unmanned Ground Vehicle, and the DroneShield stand, at the Australian Army's Robotics Expo (ARX)



- DroneShield was included, for another consecutive year, in the Australian Defence Sales catalogue, unveiled by Hon Melissa Price, Australian Defence Industry Minister, in May 2021. The Catalogue is a key brief by the Australian Government for foreign defence purchasers looking for Australian capability providers.



*Image: Front cover of the 2021 Australian Defence Sales Catalogue, including DroneShield*

- DroneShield's participation in US events included West Virginia Mock Prison Riot, the National Sheriff's Association meeting in Phoenix Arizona, and the 19th Law Enforcement Equipment and Technology Expo hosted by U.S. Border Patrol. These three events are amongst the largest events in the U.S. for Federal and State Law Enforcement and Corrections.



*Images: DroneShield participating in West Virginia Mock Prison Riot event*

- DroneShield plans to participate in major defence and security shows going ahead in second half of 2021, directly or via its partners, such as Sea-Air-Space in the US, MILIPOL in France and DSEI in the UK.
- DroneShield's new corporate video released in late June can be viewed here:



*Video: DroneShield corporate video June 2021*

- DroneShield continued marketing via an extensive in-country demonstration program via its on-the-ground local partner network.



*Image: DroneShield product demonstration in France via an in-country partner, during the quarter*



- DroneOptID™ Artificial Intelligence/Machine Learning computer vision software won two awards at the 2021 NSW iAwards - the Australian Information Industry Association's awards program that celebrates excellence in Australian Innovation. DroneOptID™ was developed with the University of Technology Sydney (UTS) under the Defence Innovation Network (DIN) grant scheme.



*Image: DroneShield engineer Guillaume Jounel winning the 2021 iAwards, for the DroneOptID computer vision AI project, developed in conjunction with UTS under a defence grant*



*Image: DroneShield CEO Oleg Vornik and Optical AI Lead Guillaume Jounel, with Dr Nabin Sharma of UTS*

- DroneShield launched a major website upgrade, enhancing its brand presence and enabling additional content, with an increased amount of digital engagement since start of COVID-19.

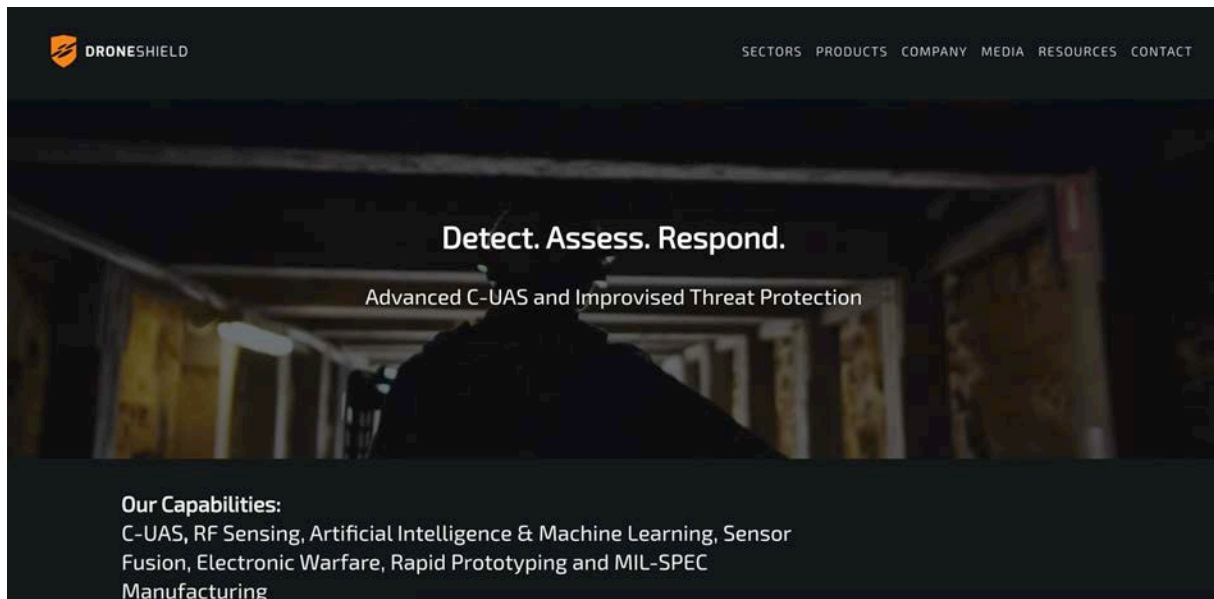


Image: enhanced DroneShield website ([www.droneshield.com](http://www.droneshield.com))

- DroneShield CEO Oleg Vornik authored a number of opinion articles on greyzone/asymmetric and robotic warfare, published in a range of mainstream and defence media channels, underscoring DroneShield's thought leadership:



**OPINION: Of [Robotic] Mice and Men: When Cyborgs Go to War - APDR**  
asiapacificdefencereporter.com • 4 min read



**Hit the biggest guy first: Vulnerability of vehicles in a modern battlezone**  
defenceconnect.com.au • 4 min read



**Op-Ed: AI warfare – Faster, un-emotional and needing microprocessors**  
defenceconnect.com.au • 3 min read



**Hi-tech warfare leaves Australia vulnerable**  
theaustralian.com.au • 5 min read



- DroneShield has invested in several campaigns with top Australian defence publications.

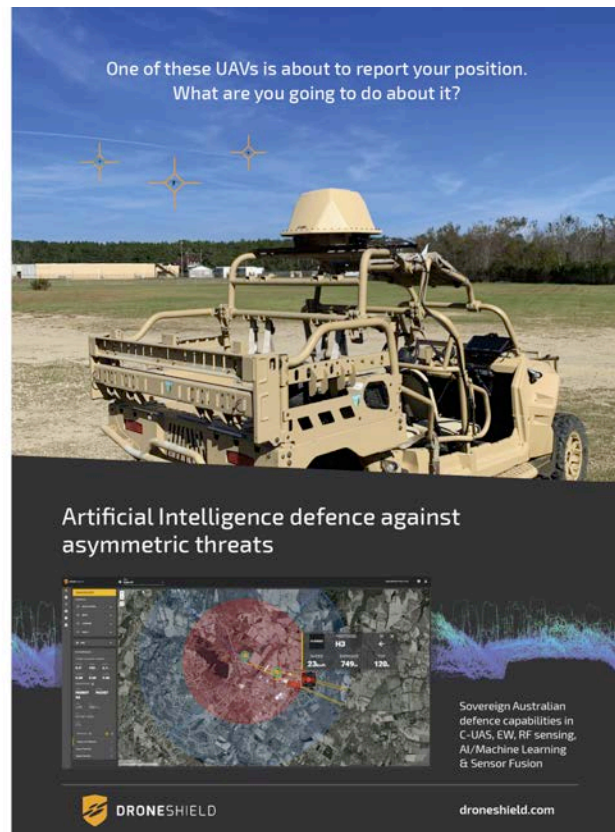


Image: DroneShield promotion in the Australian Defence Magazine

- Carla Balanco, DroneShield's CFO and Company Secretary, was recognised as a finalist in the ADM Women in Defence Awards:



Image: DroneShield CFO Carla Balanco recognised as a finalist in ADM's Women in Defence Awards during the 2Q21 quarter



- DroneShield won the NSW Premier's NSW Resilient Export Award:



*Image: NSW Government promotional feature of recognising DroneShield's performance through the recent period*

## Partnerships

### Zenith Aerospace

- DroneShield expanded into counterdrone capabilities through tethered aerial vehicles in a partnership with Zenith AeroTech.
- Zenith AeroTech is a US-based leading developer of customisable, heavy-lift tethered aerial vehicles ("TAVs"). Zenith AeroTech deployed DroneShield's DroneSentry-C2™ command-and-control system into its own family of TAVs, along with a miniaturised radar.
- Partnership between the two companies enables significantly improved and longer-range drone detection (due to reduced clutter), combined with modular countermeasures.
- Zenith AeroTech offers three different TAV platforms: Hexa, Quad 8, and Quadro. In contrast to standard drones, these three TAVs can stay aloft for hours, even days, due to Zenith's Ground Power-Tether Management System, which converts 120 or 240-volt AC power from a generator (or another source) into high-voltage DC, powering both platform and payload. The platforms themselves can carry 5-15kg of payload.
- In addition to a capable drone-detection solution, Zenith AeroTech will be offering (where lawful) DroneShield's electronic countermeasure solutions, to be used by personnel on the ground. Since the drones are detected from further away, it provides personnel on the ground more time to respond to drone threats.

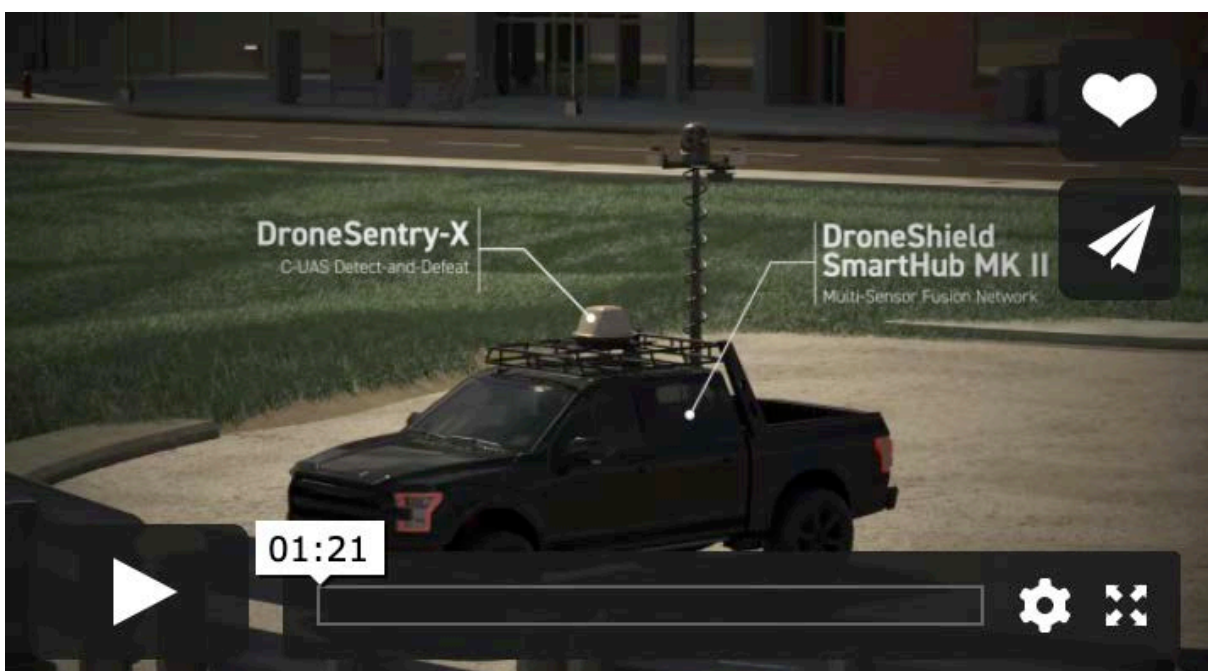


*Image: Zenith AeroTech US Government customer demonstration*

- There are many potential markets for TAVs with counterdrone capabilities, including the military protecting forward operating bases; civilian security managers flying over sensitive facilities, and law enforcement safeguarding well-attended public events.

### Trakka Systems

- Trakka Systems, with whom DroneShield entered into a partnership in 1Q21, released a promotional video of the combined offering of the two companies. Trakka and DroneShield undertook a significant amount of joint marketing to US Government customers during the 2Q21 quarter:

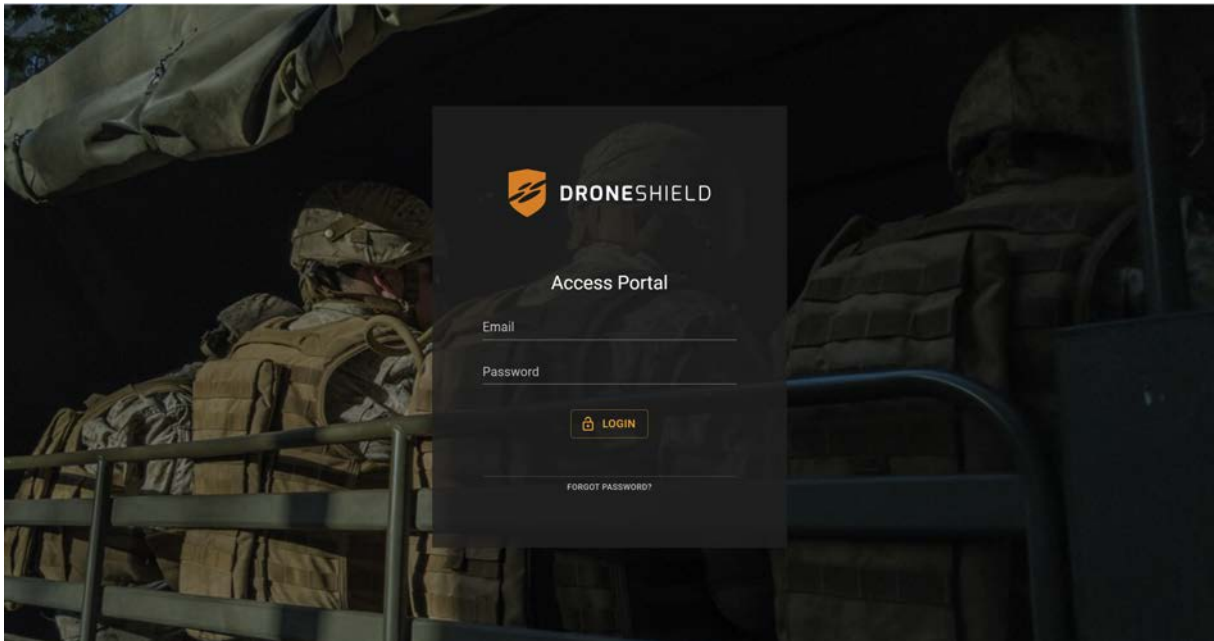


*Video: Trakka Systems combined product video with DroneShield's technology*

## Product Development

### Secure Software Portal

- As the Company's recurring Software as a Service ("SaaS") business is continuing to grow with an increasing number of deployed devices on subscription plans, DroneShield has launched a secure portal, providing a scalable way for its customers to access periodic software updates.



*Image: DroneShield's secure software portal*

### Immediate Response Kit (IRK)

- In June, DroneShield announced the release of Immediate Response Kit (IRK™), a rapidly deployable C-UAS detection and defeat kit.
- IRK™ consists of an RfPatrol MKII™ portable (1.2kg incl battery) detection device and a DroneGun MKIII™ (2.1kg incl. battery) defeat device, in a single rugged carry case.
- The kit is now available to approved purchasers. IRK™ was introduced in response to substantial interest from several end users.

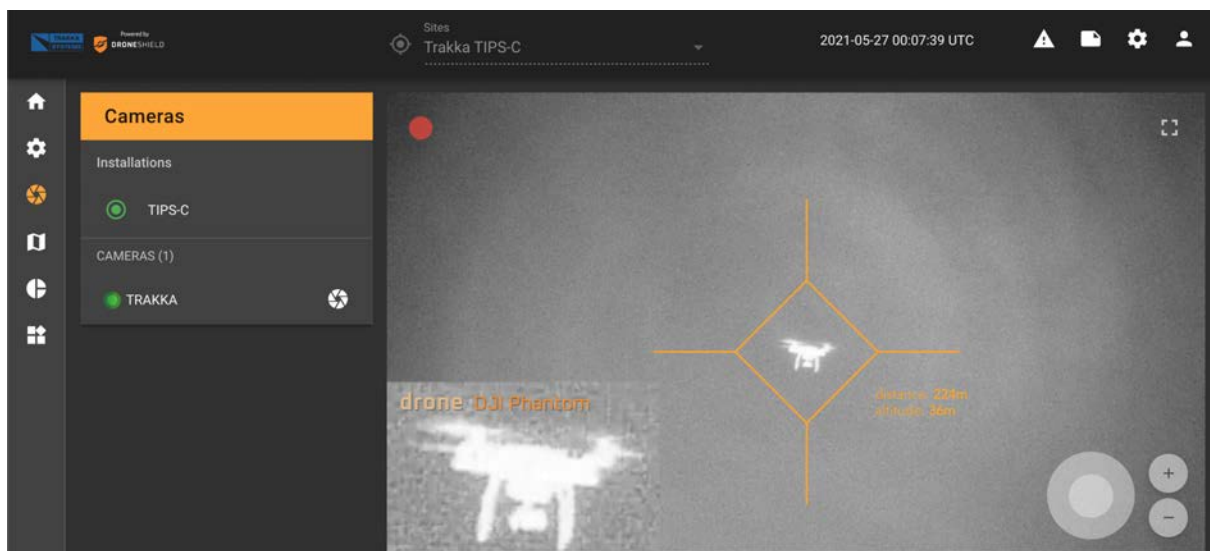


*Image: Immediate Response Kit (IRK)*



## DroneOptID™ 2.0

- In May 2021, DroneShield announced the release of DroneOptID™ 2.0, the second-generation version of its optical Artificial Intelligence/Machine Learning based software.
- The original DroneOptID™ system, developed in collaboration with the University of Technology Sydney (UTS) under a Defence Innovation Network grant from the Australian Government, has paved the way into a sophisticated AI-based software engine to detect, classify and track small, rapidly moving UAS, as well as their payloads.
- The updates include a substantial overall enhancement of the engine, effectiveness in a wider range of environments including night-time via thermal sensors, improved detection and classification of UAS payloads and cutting-edge technology estimating the target distance and altitude from the sensor.
- The update is provided as part of the overall DroneSentry-C2™ command-and-control ecosystem. The software processes imagery from a number of third-party camera hardware partners, including Trakka cameras, as part of their on-vehicle TIPS-C solution.
- DroneShield utilises its proprietary techniques in signal processing and Machine Learning/AI to do near-real time detection and identification of unmanned robotic systems (UAVs, UGVs and USVs). Its DroneOptID™ the optical sensor stream works in parallel with RFAI cutting edge software engine in the radiofrequency spectrum sensing space.
- In addition to enabling a variety of cameras substantially enhanced capabilities of target tracking via a layer of software, DroneOptID™ also opens the door to a variety of sophisticated target tracking applications on battlefield, cluttered urban and other complex environments, for a variety of threats, which is of interest to the Company's existing and prospective Government and military customer base.



*Image: DroneOptID™ module within the DroneSentry-C2™ system*

## Press Coverage

- DroneShield and COSOL lift after multimillion dollar defence contracts<sup>5</sup>
- DroneShield lands \$1.1M Govt. contract<sup>6</sup>
- DroneShield receives \$2.3M multi-option payment from Middle East<sup>7</sup>
- DroneShield Ltd Releases TIPS-C Video<sup>8</sup>
- Call for Action for NSW Defence Businesses<sup>9</sup>
- DroneShield – US Law Enforcement Initial Order<sup>10</sup>
- This Australian company is helping countries across the world counter drone threats<sup>11</sup>
- DroneShield Fills Multiple Export Orders<sup>12</sup>
- Zenith AeroTech to offer DroneShield counter-drone capabilities on tethered aerial vehicles<sup>13</sup>
- To Catch a Drone: DroneShield, Zenith AeroTech Partner on Tethered Drone Counter UAS System<sup>14</sup>
- Sydney Drone Jamming Firm to Work with Tethered Drones<sup>15</sup>
- DroneShield releases second generation DroneOptID 2.0 drone detection software<sup>16</sup>
- The Anti-Drone Weapons Carried by Security at Biden's Meeting in Brussels<sup>17</sup>
- DroneShield eyes SF market with IRK detect-and-defeat solution<sup>18</sup>
- DroneShield builds \$200 million sales with counter-drone and AI expertise<sup>19</sup>



Video: SBS World News coverage of DroneShield

<sup>5</sup> <https://stockhead.com.au/tech/droneshield-and-cosol-lift-after-multimillion-dollar-defence-contracts/>

<sup>6</sup> <https://themarketherald.com.au/droneshield-asxdro-lands-1-1m-govt-contract-2021-04-07/>

<sup>7</sup> <https://themarketherald.com.au/droneshield-asxdro-receives-2-3m-multi-option-payment-from-middle-east-2021-04-13/>

<sup>8</sup> <https://uasweekly.com/2021/05/09/droneshield-ltd-releases-tips-c-video/>

<sup>9</sup> <https://nsw.liberal.org.au/Shared-Content/News/2021/Call-to-action-for-NSW-defence-businesses>

<sup>10</sup> <https://www.suasnews.com/2021/04/droneshield-us-law-enforcement-initial-order/>

<sup>11</sup> <https://www.sbs.com.au/news/this-australian-company-is-helping-countries-across-the-world-counter-drone-threats>

<sup>12</sup> <https://defencetechnologyreview.partica.online/defence-technology-review/dtr-june-2021/flipbook/26/>

<sup>13</sup> <https://www.suasnews.com/2021/05/zenith-aerotech-to-offer-droneshield-counter-drone-capabilities-on-tethered-aerial-vehicles/>

<sup>14</sup> <https://dronelife.com/2021/05/24/to-catch-a-drone-droneshield-zenith-aerotech-partner-on-tethered-drone-counter-uas-system/>

<sup>15</sup> <https://australianaviation.com.au/2021/05/sydney-drone-jamming-firm-to-work-with-tethered-drones/>

<sup>16</sup> <https://www.unmannedairspace.info/latest-news-and-information/droneshield-releases-second-generation-droneoptid-2-0-drone-detection-software/>

<sup>17</sup> <https://www.thedrive.com/the-war-zone/41093/check-out-the-anti-drone-weapons-carried-by-security-at-biden-meeting-in-brussels>

<sup>18</sup> <https://www.janes.com/defence-news/news-detail/droneshield-eyes-sf-market-with-irk-detect-and-defeat-solution>

<sup>19</sup> <https://www.austrade.gov.au/news/success-stories/droneshield-builds-200-million-sales-with-counter-drone-and-ai-expertise>





NEWS

## DroneShield fills multiple export orders



### COUNTER-DAY TECHNOLOGY

Australian manufacturer DroneShield has commenced shipments of its latest counter- unmanned aerial vehicle (C-UAV) technology to a number of international customers.

The Sydney-based company is supplying the DroneSentry-X on-vehicle-on-ship C-UAV system to undisclosed operators in the US, UK and South East Asia.

LEFT: A DroneSentry-X C-UAV system mounted on the roll-off of an ultra-light tactical vehicle. Image: DroneShield

advances made in the development of the successful DroneGun and DroneSentry product lines. The software utilises artificial intelligence/machine learning-based analysis of the radio frequency spectrum surrounding the device, enabling it to learn and adapt to new threats as they evolve.

The device uses complex waveform designs to create a complete bubble of coverage (detection and neutralisation) against asymmetric threats such as UAVs, coupled with passive cooling, shock-proof mounting and the ability to integrate tracking of the C-UAS activity on a moving platform and into a central command and control system.

DroneSentry-X has been evaluated by the US Navy in live trials with "exceptionally positive results", according to DroneShield.

- Phillip Thianos

## Romania adopts NSM in land-based ASM role

The Romanian Government has signed an agreement with the US Navy (USN) to purchase the Raytheon Naval Strike Missile Coastal Defence System (NSM CDS). The agreement, formally referred to as a Letter of Offer and Acceptance, makes Romania the first country to purchase the system via the US Foreign Military Sales program.

The US\$286 million (AUD\$370 million) purchase includes four mobile launch vehicles, a platform for command, control and communications, transport and loading/unloading platforms, sensors, initial logistics support, maintenance and testing equipment.

Developed by Kongsberg, NSM is a fifth-generation long-range precision missile intended to strike heavily defended land and maritime targets. In Romanian service, the NSM CDS will



ABOVE: Romania will join Poland in fielding the NSM Coastal Defence System by 2024.

comprise truck-mounted missiles fired from canisters. Of particular importance to Romania, due to its diverse topography, is that NSM can climb and descend in line with the terrain.

In 2018, the USN selected NSM for its over-the-horizon anti-ship missile role onboard the Littoral Combat

Ships and Constellation-class frigates, where it carries the designation RGM-184A NSM Block 1. The US Marine Corps selected the NSM in 2019 for use in the land-based ASM role, test-firing the missile from an unmanned Joint Light Tactical Vehicle in late 2020.

- Staff Reporters

25 NEWS

DEFENCE TECHNOLOGY REVIEW | ISSUE 76 | JAN 2023

## ENIM

### AMPHIBIOUS LANDING CRAFT FOR INDEPENDENT FORCE PROJECTION FROM SEA

- / Proven In-service Design
- / Australian Manufacture & Support Network
- / Scalable design to suit requirements



- ✓ High speed | 35 knots
- ✓ Low draft | 1 m
- ✓ Heavy payload | 100 tonnes
- ✓ Great autonomy | 700 NM

watch video

www.cnim.com

Image: Defence Technology Review coverage



Image: DroneGun Tactical being carried by security personnel during US President Biden's meeting with Belgian King Philippe in Brussels

- DroneGun Tactical the ultimate UAV killer<sup>20</sup>
- Hit the Biggest Guy First: Vulnerability of vehicles in a modern battlezone<sup>21</sup>
- Of [Robotic] Mice and Men: When Cyborgs Go to War<sup>22</sup>
- Zenith AeroTech expands into C-UAS space<sup>23</sup>

## Environment

Advancements in UAS range, payloads and flight performance see continuously rising threats from drones. The reported threats can be loosely organised into the following categories: passenger aircraft, stadiums/public venues, military, law enforcement, prisons, critical infrastructure, VIPs and general nuisance. This section covers a few (but far from all) threats reported in the last quarter.

### Threats to Passenger Aircraft

- A U.S. Customs and Border Protection helicopter flying in Arizona was ‘buzzed’ by a drone in May, which followed the aircraft at altitudes in excess of 14,000ft, for over an hour. Multiple law enforcement agencies were dispatched in an attempt to visually track the unidentified UAS but were unsuccessful in doing so.
- In British Columbia, aerial firefighting crews battling a 250 hectare forest fire were grounded after an unauthorised UAS was sighted in the vicinity.
- In June, a critical care team operating in Standley, England, were delayed in transporting their patient when an unknown UAS was spotted flying in close proximity to the helicopter.
- In New Zealand, a sharp-eyed paramedic was the only difference between safety and a potential catastrophe involving an illegally intruding UAS and a medical helicopter. The small UAS was approximately 20m from the helicopter and 5m above the ground when it was noticed by the paramedic, minutes before the scheduled takeoff.
- Flights were suspended at Auckland airport in April, after a pilot spotted a drone come within 30m of the aircraft during flight. Attempts to identify and prosecute the pilot were unsuccessful.
- In South Africa, an airport employee on their way to work spotted two drones flying directly in the flight path of multiple helipads. The Commercial Unmanned Aircraft Association of Southern Africa (CUAASA) said in a statement that “A drone ingested into an engine could cause a catastrophic accident. It is therefore important to remind drone owners to follow the regulations and specifically not to fly their drone near aerodromes”.
- A RAF aircraft carrying UK VIPs, including one of Britain’s most senior civil servants, came within one hundred meters of an unauthorized, 3ft wide drone operating well above legal altitude. The incident occurred at 4,000ft, ten times higher than the legal maximum height which drones can operate.

### Stadium / Public Venue Disruptions

- The Chilean national football team, training for World Cup qualifier, spotted a drone hovering over their field. The drone was suspected to be spying on the team for Argentina, who they were scheduled to play later in the week. The drone was owned by a Chilean energy company conducting survey work, however this was not determined until later, following the disruption to the game.

<sup>20</sup> <https://asiatimes.com/2021/06/dronegun-tactical-the-ultimate-uav-killer/>

<sup>21</sup> <https://www.defenceconnect.com.au/blog/8242-hit-the-biggest-guy-first-vulnerability-of-vehicles-in-a-modern-battlezone>

<sup>22</sup> <https://asiapacificdefencereporter.com/opinion-of-robotic-mice-and-men-when-cyborgs-go-to-war/>

<sup>23</sup> <https://www.janes.com/defence-news/news-detail/zenith-aerotech-expands-into-c-uas-space>



- Suspicions of drones being used by clubs to spy on rivals is well documented. In 2014, the French football team was spied on by a small drone in the lead up to their World Cup campaign. In 2017, Honduras accused the Australian team of using a UAS to spy leading up to their qualifying match. In 2018, a well-known German football team admitted to flying a drone over a rival's training ground.



*Images: The drone suspected of spying on the Chilean national football team*

- In California in June, a drone flown illegally over a protected ecological reserve crash landed, scaring off an estimated 3,000 birds. The incident left between 1,500-2,000 eggs behind, all of which will be lost, leaving a devastating and long-lasting impact on the local bird population.



*Image: Thousands of eggs (left) abandoned after a UAS (right) crashed amongst a nesting bird population.*

### Military

- North Korea's recently tested "suicide drones", capable of conducting long range espionage over South Korea, with the capability of launching coordinated attacks. The use of drones across the Korean border has existed for some time, with the recent change in trajectory from espionage to nefarious payload capabilities.



*Image: A suspected North Korean drone found on a mountain in Inje, South Korea*

- Terrorist group Hamas has revealed the adoption of explosive-laden drones, similar to those used by Iranian forces. The Hamas-built vehicles are capable of delivering approximately five kilograms of explosive payload and have been designed to attempt to avoid the Israeli Iron Dome defence system which consistently intercepts larger rockets. The intercepted drones reportedly utilise commercial GPS modules and a number of commercial-off-the-shelf components.



*Image: A Hamas drone prior to launch*

- In Baghdad, an aircraft hangar was damaged by two explosive-laden drones in June. US troops are currently posted at Baghdad airport, a regular target by pro-Iranian forces.
- Continued investigation into a 2019 incident involving multiple US naval warships and unidentified UAVs has further highlighted how difficult small unmanned aerial vehicles are to detect, track and identify. The logs from US naval vessels on the night of the incident record how the multiple UAVs followed the USS Kidd for ninety minutes, matching the vessels speed throughout the encounter. Records note the ease in which the UAVs were able to approach, maintain proximity, then disappear from the ship's sensors. Further investigation unearthed two more incidents of a similar nature which occurred over the following weeks.
- Allied forces are acting on the increased threat that UAS based warfare poses to defence personnel and assets. The US Army plans to nearly triple the number of dedicated electronic warfare personnel within the next two years, setting up specialised units to handle threats, including those posed by UAS.

#### Oil Assets and Critical Infrastructure

- In April, an Iranian oil tanker was struck by a UAS of unknown origins. The attack caused significant damage and fire aboard the vessel, which was one of three oil tankers to arrive at the Syrian oil terminal.

#### Law Enforcement

- In Mexico, two police officers were wounded by explosives dropped from a cartel-operated drone. Whilst disassembling a blockade placed by an organized crime syndicate, the officers noticed a drone flying overhead shortly before a gunpowder bomb was dropped. An informant within one of Mexico's cartels explained that his organization has approximately 100 drones, used for a variety of purposes including smuggling, surveillance



and dropping ordinance. The popularity of drones amongst cartels has risen sharply in recent years.



*Image: Example of a cartel drone seized in 2017, with explosives and remote detonator attached to the main body of the device.*

- In California, a man was arrested in the midst of an attempted smuggling operation, flying a small consumer drone with suspected heroin attached to it. Local law enforcement was only made aware of the drone when the suspect alerted them during the arrest for an unrelated outstanding warrant.
- Weaponising the UAS itself has also been presented as a tool for law enforcement agencies conducting no-knock warrants. A new UAS with a spinning blade attachment claims it can break through tempered, automotive and residential glass. The capability to easily transform a drone with add-ons such as this echoes how easily such techniques can be deployed by groups with nefarious intentions.

#### Prisons

- In June, local Canadian authorities confirmed that officers at Doncona prison have detained more than a hundred drones a year, over the past five years. UAS are easily replaced, being readily available at low cost. The small size factor and accuracy of flight has even allowed drones to deliver contraband directly to the windows of cells, circumventing what can be risky drops into open recreation areas seen in other prisons.

Please see <https://www.droneshield.com/news> and <https://twitter.com/DroneShield> for more information.

#### **Payments to related parties of the entity and their associates**

During the quarter, DroneShield paid Sort Hub Pty Ltd \$47,303 for shipping of inventory globally, on normal commercial terms and conditions no more favourable than those available from other parties in the logistics industry. Director Jethro Marks is a related party of Sort Hub Pty Ltd.

Board fees paid to Non-Executive Directors, and salary to CEO amounted to \$322,498.

## Capital Structure

As of the date of this report, there are 394,446,768 ordinary shares on issue. No other class of securities (other than the options referenced below) exist.

Below table summarises current outstanding options, issued to the Board, management and staff (and in the case of class R and class V options, issued to brokers as part of previous capital raisings).

Class	Amount Outstanding	Strike Price	Expiry
G	250,000	30c	29 Mar 2022
K	575,000	50c	22 Jun 2022
P	500,000	40c	5 Aug 2022
Q	3,570,834	65c	30 Jun 2023
R	10,000,000	40c	5 Aug 2022
T	2,100,000	20c	31 Oct 2021
V	5,000,000	25c	27 May 2024
W	450,000	20c	24 Jun 2024
Zepos	2,459,384	Nil (Vesting conditions met on 5 July 2021)	17 Oct 2021
Zepos	4,770,000	Nil (exercise can only take place when the Company achieves \$20m in revenue or cash receipts in a 12-month period (not counting any revenue or cash receipts applied to Tranche 1 Zepos vesting, or a takeover or a similar transaction occurs)	30 Nov 2022
Zepos	19,000,000	Nil (exercise can only take place when the Company achieves \$10m in revenue or cash receipts in a 12-month period, or a takeover or a similar transaction occurs)	31 Aug 2024
Total	48,675,218		

The Company utilises stock option grants as effective means of employee engagement and aligning with shareholder interests. Additionally, both the chairman and the CEO, and some of the employees have purchased DRO shares with their own funds, on market, or in past capital raises.

The approximate summary of Board and employee equity positions is as follows:

Director and Employee Shareholdings		
Oleg Vornik, CEO and Managing Director	4,370,022 shares 13,650,000 options <sup>2</sup>	1.11% <sup>1</sup>
Peter James, Independent Non-Executive Chairman	3,452,522 shares 7,262,500 options <sup>2</sup>	0.88% <sup>1</sup>
Jethro Marks, Non-Executive Director	583,333 shares 166,667 options <sup>2</sup>	0.15% <sup>1</sup>
Other Employees	6,059,570 shares 9,776,051 options <sup>2</sup>	1.54% <sup>1</sup>

<sup>1</sup> Based on the shares held and excluding options

<sup>2</sup> Options issued at various strike price and maturities

Authorised for release by Oleg Vornik, CEO and Managing Director.



**Further Information**

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**About DroneShield Limited**

DroneShield (ASX:DRO) is an Australian publicly listed company with its head office in Sydney and teams in the US and UK, specialising in C-UAS, Electronic Warfare, RF sensing, Artificial Intelligence and Machine Learning, Sensor Fusion, rapid prototyping and MIL-SPEC manufacturing. Our capabilities are used to protect military, Government, law enforcement, critical infrastructure, commercial and VIPs throughout the world.

Through our team of Australian based engineers, we offer customers bespoke solutions and off-the-shelf products designed to suit a variety of terrestrial, maritime or airborne platforms. DroneShield is proudly exporting Australian capability to customers throughout the world and supporting Australia's defence, national security and other organisations protect people, critical infrastructure and vital assets.

**END**

## Appendix 4C

### Quarterly cash flow report for entities subject to Listing Rule 4.7B

**Name of entity**

DRONESHIELD LIMITED

**ABN**

26 608 915 859

**Quarter ended ("current quarter")**

30 June 2021

<b>Consolidated statement of cash flows</b>		<b>Current quarter \$A</b>	<b>Year to date (6 months) \$A</b>
<b>1. Cash flows from operating activities</b>			
1.1 Receipts from customers		7,442,702	9,120,724
1.2 Payments for			
(a) research and development		(143,921)	(291,359)
(b) product manufacturing and operating costs		(3,389,027)	(5,005,125)
(c) advertising and marketing		(300,892)	(621,988)
(d) leased assets		-	-
(e) staff costs		(1,790,336)	(3,065,412)
(f) administration and corporate costs		(1,172,874)	(2,155,972)
1.3 Dividends received (see note 3)		-	-
1.4 Interest received		32,639	32,639
1.5 Interest and other costs of finance paid		(6,275)	(16,972)
1.6 Income taxes paid		-	-
1.7 Government grants and tax incentives		37,370	263,338
1.8 Other (provide details if material)		17,600	52,800
<b>1.9 Net cash from / (used in) operating activities</b>		<b>726,986</b>	<b>(1,687,327)</b>
<b>2. Cash flows from investing activities</b>			
2.1 Payments to acquire or for:			
(a) entities		-	-
(b) businesses		-	-
(c) property, plant and equipment		(103,259)	(172,569)
(d) investments		-	-
(e) intellectual property		-	-



<b>Consolidated statement of cash flows</b>		<b>Current quarter \$A</b>	<b>Year to date (6 months) \$A</b>
	(f) other non-current assets	-	-
2.2	Proceeds from disposal of:		
	(g) entities	-	-
	(h) businesses	-	-
	(i) property, plant and equipment	-	-
	(j) investments	-	-
	(k) intellectual property	-	-
	(l) other non-current assets	-	-
2.3	Cash flows from loans to other entities	-	-
2.4	Dividends received (see note 3)	-	-
2.5	Other (provide details if material)	-	-
<b>2.6</b>	<b>Net cash from / (used in) investing activities</b>	<b>(103,259)</b>	<b>(172,569)</b>

<b>3.</b>	<b>Cash flows from financing activities</b>		
3.1	Proceeds from issues of equity securities (excluding convertible debt securities)	-	-
3.2	Proceeds from issue of convertible debt securities	-	-
3.3	Proceeds from exercise of options	-	-
3.4	Transaction costs related to issues of equity securities or convertible debt securities	-	-
3.5	Proceeds from borrowings	-	-
3.6	Repayment of borrowings	-	(150,368)
3.7	Transaction costs related to loans and borrowings	-	-
3.8	Dividends paid	-	-
3.9	Other (provide details if material)	(22,698)	(65,060)
<b>3.10</b>	<b>Net cash from / (used in) financing activities</b>	<b>(22,698)</b>	<b>(215,428)</b>

<b>4.</b>	<b>Net increase / (decrease) in cash and cash equivalents for the period</b>		
4.1	Cash and cash equivalents at beginning of period	13,625,876	16,288,772
4.2	Net cash from / (used in) operating activities (item 1.9 above)	726,986	(1,687,327)
4.3	Net cash from / (used in) investing activities (item 2.6 above)	(103,259)	(172,569)

<b>Consolidated statement of cash flows</b>		<b>Current quarter \$A</b>	<b>Year to date (6 months) \$A</b>
4.4	Net cash from / (used in) financing activities (item 3.10 above)	(22,698)	(215,428)
4.5	Effect of movement in exchange rates on cash held	23,685	37,142
4.6	<b>Cash and cash equivalents at end of period</b>	<b>14,250,590</b>	<b>14,250,590</b>

<b>5. Reconciliation of cash and cash equivalents</b> at the end of the quarter (as shown in the consolidated statement of cash flows) to the related items in the accounts	<b>Current quarter \$A</b>	<b>Previous quarter \$A</b>
5.1 Bank balances	10,376,009	1,483,742
5.2 Call deposits	3,874,581	12,142,134
5.3 Bank overdrafts	-	-
5.4 Other (provide details)	-	-
<b>5.5 Cash and cash equivalents at end of quarter (should equal item 4.6 above)</b>	<b>14,250,590</b>	<b>13,625,876</b>

<b>6. Payments to related parties of the entity and their associates</b>	<b>Current quarter \$A</b>
6.1 Aggregate amount of payments to related parties and their associates included in item 1 Payments to CEO and Non-Executive Directors of \$322,498, and payment of \$47,303 for inventory global shipping costs to shipper Sort Hub Pty Ltd, of which the director Jethro Marks is a related party.	(369,801)
6.2 Aggregate amount of payments to related parties and their associates included in item 2	-



<b>7. Financing facilities</b>	<b>Total facility amount at quarter end \$A</b>	<b>Amount drawn at quarter end \$A</b>
<i>Note: the term "facility" includes all forms of financing arrangements available to the entity.</i>		
<i>Add notes as necessary for an understanding of the sources of finance available to the entity.</i>		
7.1 Loan facilities	-	-
7.2 Credit standby arrangements	-	-
7.3 Other (please specify)	-	-
7.4 <b>Total financing facilities</b>	-	-
7.5 <b>Unused financing facilities available at quarter end</b>		-

<b>8. Estimated cash available for future operating activities</b>	<b>\$A</b>
8.1 Net cash from / (used in) operating activities (item 1.9)	726,986
8.2 Cash and cash equivalents at quarter end (item 4.6)	14,250,590
8.3 Unused finance facilities available at quarter end (item 7.5)	-
8.4 Total available funding (item 8.2 + item 8.3)	14,250,590
8.5 <b>Estimated quarters of funding available (item 8.4 divided by item 8.1)</b>	<b>N/A</b>
<i>Note: if the entity has reported positive net operating cash flows in item 1.9, answer item 8.5 as "N/A". Otherwise, a figure for the estimated quarters of funding available must be included in item 8.5.</i>	
8.6 If item 8.5 is less than 2 quarters, please provide answers to the following questions:	
8.6.1 Does the entity expect that it will continue to have the current level of net operating cash flows for the time being and, if not, why not?	
Answer: N/A	
8.6.2 Has the entity taken any steps, or does it propose to take any steps, to raise further cash to fund its operations and, if so, what are those steps and how likely does it believe that they will be successful?	
Answer: N/A	
8.6.3 Does the entity expect to be able to continue its operations and to meet its business objectives and, if so, on what basis?	
Answer: N/A	
<i>Note: where item 8.5 is less than 2 quarters, all of questions 8.6.1, 8.6.2 and 8.6.3 above must be answered.</i>	

## Compliance statement

- 1 This statement has been prepared in accordance with accounting standards and policies which comply with Listing Rule 19.11A.
- 2 This statement gives a true and fair view of the matters disclosed.

Date: 12 July 2021

Authorised by:  .....  
Carla Balanco, Company Secretary

## Notes

1. This quarterly cash flow report and the accompanying activity report provide a basis for informing the market about the entity's activities for the past quarter, how they have been financed and the effect this has had on its cash position. An entity that wishes to disclose additional information over and above the minimum required under the Listing Rules is encouraged to do so.
2. If this quarterly cash flow report has been prepared in accordance with Australian Accounting Standards, the definitions in, and provisions of, *AASB 107: Statement of Cash Flows* apply to this report. If this quarterly cash flow report has been prepared in accordance with other accounting standards agreed by ASX pursuant to Listing Rule 19.11A, the corresponding equivalent standard applies to this report.
3. Dividends received may be classified either as cash flows from operating activities or cash flows from investing activities, depending on the accounting policy of the entity.
4. If this report has been authorised for release to the market by your board of directors, you can insert here: "By the board". If it has been authorised for release to the market by a committee of your board of directors, you can insert here: "By the [name of board committee – eg Audit and Risk Committee]". If it has been authorised for release to the market by a disclosure committee, you can insert here: "By the Disclosure Committee".
5. If this report has been authorised for release to the market by your board of directors and you wish to hold yourself out as complying with recommendation 4.2 of the ASX Corporate Governance Council's *Corporate Governance Principles and Recommendations*, the board should have received a declaration from its CEO and CFO that, in their opinion, the financial records of the entity have been properly maintained, that this report complies with the appropriate accounting standards and gives a true and fair view of the cash flows of the entity, and that their opinion has been formed on the basis of a sound system of risk management and internal control which is operating effectively.