@DroneShield
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14 November 2018 **ASX RELEASE**

Unmanned Aircraft Systems East Conference

DroneShield Ltd (ASX:DRO) ("DroneShield" or the "Company") is pleased to announce that its CEO Oleg Vornik will be presenting at the Unmanned Aircraft Systems East For Defense & Government Conference in Arlington, Virginia on 16 November 2018.

This year's speakers include a range of U.S. governmental decision-makers, including the Chief of the United States Air Force Intelligence Systems Division. Mr. Vornik is the sole speaker focusing on counter-drone activities at the conference. The Company's presentation and the conference agenda are enclosed.

Further Information

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About DroneShield Limited

Based in Sydney, Australia and Virginia, USA, DroneShield is a worldwide leader in drone security technology. The Company has developed pre-eminent drone security solutions that protect people, organisations and critical infrastructure from intrusion from drones. Its leadership brings world-class expertise in engineering and physics, combined with deep experience in defence, intelligence, and aerospace.

ENDS

Unmanned Aircraft Systems East
For Defense & Government
November 15-16, 2018 (Hilton Arlington, VA)

Technology Training Corporation
TTC™

DAY ONE: THURSDAY, NOVEMBER 15th, 2018		DISCUSSION TOPIC
9:00-9:10	***Administrative Announcements***	
9:10-9:40	**BOEING KEYNOTE** **REAR ADM. (USN-ret) DONALD "BD" GADDIS,** Program Lead, MQ25A Stingray, Boeing Phantom Works	**"MQ25A Stingray Carrier Based UAS Capabilities"**
9:40-10:10	**INSITU KEYNOTE** **JON DAMUSH,** Chief Growth Officer, Insitu	**"Emerging UAS Platforms & Capabilities"**
10:10-10:40	**KEVIN JOHNSON,** Chief, Requirements and Analysis Division ISR Operations Directorate, OUSD(I) **and** **JOHN "MIKE" STAMP,** ISR Analyst, Redhorse Corporation	**"USD(I) Group 2/3 UAS Study"**
10:40-11:15	***Networking & Refreshment Break***	
11:15-11:45	**COLONEL (USAF-RET) STEPHEN "LUX" LUXION,** Executive Director, ASSURE FAA Center of Excellence for UAS, Mississippi State University	**"ASSURE UAS Program & Capabilities"**
11:45-12:15	**COLONEL JEREMY FIELDS, USAF,** Chief, Reconnaissance Operations, A2XO	**"RPA Needs, Capabilities & Requirements for Air Force ISR "**
12:15-1:30	***Lunch Break***	
1:30-2:00	**COLONEL JEFFERY PATTON, USAF,** 49th Operations Group Commander	**"MQ-9 Innovative Training Methods"**
2:00-2:30	**LTC DAVID BENJAMIN, USA,** Medium Altitude Endurance Product Manager, Unmanned Aircraft Systems, Program Executive Office, U.S. Army Aviation, Redstone Arsenal	**"Army PM UAS Platforms, Testing, Plans and Programs"**
2:30-3:00	**MATTHEW SOUTH,** Naval Air Warfare Center Weapons Division Unmanned Systems IPT Lead	**"NAWCWD UxS Capabilities**
3:00-3:45	***Networking & Refreshment Break***	
3:45-4:15	**MAJOR CHASE "MILK TOAST" THOMPSON, USMC,** UAS Capabilities Integration Officer, HQMC Capabilities Development & Integration	**"Current & Future UAS Needs, Requirements and Capabilities"**
4:15-4:45	**MARK DOMBROFF,** LeClairRyan	**"The FAA Reauthorization Act of 2018"**
4:15	***Day 1 Adjournment***	

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DAY TWO: FRIDAY, NOVEMBER 16th, 2018		DISCUSSION TOPIC
9:00-9:10	***Two Welcome and Administrative Announcements***	
9:10-9:40	**JOSEPH SMITH,** Acting Director, Warfighter Support Office (TAW), IT Services Directorate, (T), National Geospatial-Intelligence Agency, (NGA)	**"ARTEMIS INITIATIVE"**
9:40-10:10	**COLONEL (USAF-ret) CHRIS PEHRSON,** Vice President, Strategic Development, General Atomics Aeronautical Systems, Inc.	**"UAS in the Future Security Environment"**
10:10-10:40	**DR. JAVID BAYANDOR,** Founder and Director, CRashworthiness for Aerospace Structures and Hybrids (CRASH) Lab, Dept of Mechanical and Aerospace Engineering, University at Buffalo - The State University of New York	**"Highly Detailed Real-world UAS Crashworthiness Modeling and Predictive Capabilities"**
10:40-11:00	***Networking & Refreshment Break***	
11:00-11:30	**OLEG VORNIK,** Chief Executive Officer, DroneShield	**"Counter UAS Capabilities for Defense"**
11:30-12:00	**CHUCK GASSERT,** Defense Intelligence Information Enterprise (DI2E), Global ISR Knowledge Management Integrated Projects Team Chair, Office of Naval Intelligence Liaison for PMW-120	**"DCGS UAS Capabilities"**
12:00-12:30	**LT COL (USAF-ret) PETER "PEPE" LEHEW,** Modern Technology Solutions, Inc. Senior Consultant to AFRL Center for Rapid Innovation	**"Trends in UAS Development and Learning from Others"**
12:30-1:45	***Lunch Break***	
1:45-2:15	**PAUL G. STANKIEWICZ,** Force Projection, Sector, Johns Hopkins University Applied Physics Laboratory	**"General Methods for Autonomy Test and Evaluation"**
2:15-2:45	**DR. HANS MUMM,** Victory Systems, Author & Entrepreneur, Futurist and Former Army Intelligence Officer	**"Integrating Autonomous Systems; Drones-Artificial Intelligence and the Human Race…Can They Co-Exist?"**
2:45-3:00	***Refreshment Break***	
3:00-3:30	**DAVE PETERSON,** President & CEO, Fenix Group, Inc.	**"Tactical communications for UAS"**
3:30-4:00	**DR. ROBERT WALTERS,** Senior Scientist, Packet Digital	**"Developments in Commercial UAS Airspace"**
4:00	***TTC Closing Comments & Adjournment***	

DRONESHIELD

Counter UAS Capabilities for Defense

UAS East | 16 November 2018

The Problem

The Problem

U.S. Secretary of Defense Discusses Threat of Drones

The Problem

ISIS Drone Attack Video

Threat Areas

Military

Law Enforcement

Critical Infrastructure

Prisons

Airports

Special Events

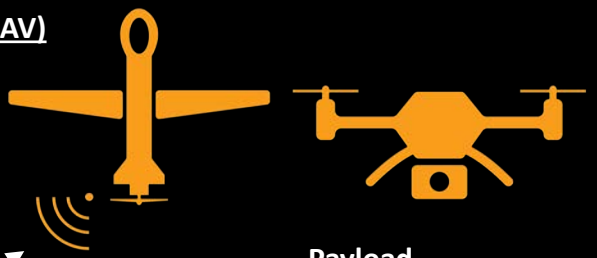
Commercial Venues

VIP Residences

Unmanned Aircraft System (UAS) Defined

Global Navigation Satellite System
- GNSS sensor on aircraft
- International Navigation System
  - GPS
  - GLONASS
  - Galileo
  - Beidou

Unmanned Aerial Vehicle (UAV)
- Airframe, motor(s), fuel
- Flight control system
- Fixed-wing, multi-copter, helicopter, or other



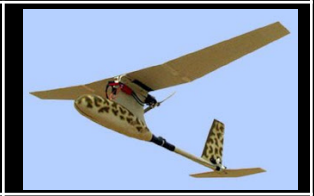
Payload
- Gimbal
- Camera, lidar or other sensors
- Non-sensor payload (eg explosive)

Data Link (Command & Control [C2])
- Transmitters and receivers
- Uplink and downlink between aircraft and ground control station

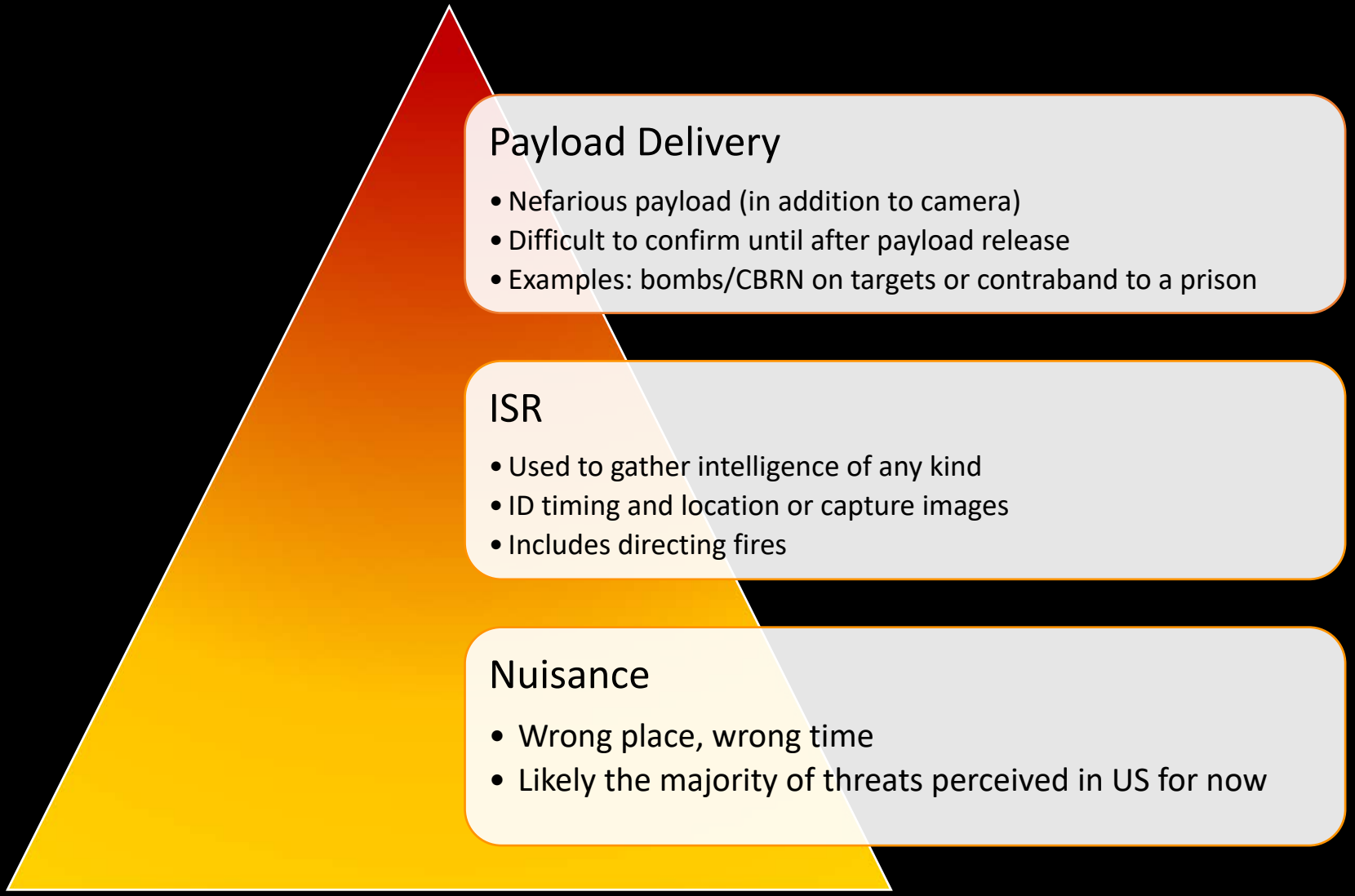
Ground Control Station
- Control center
- Mission planning
- Computer, mobile device, and/or remote radio controller

Human Operator(s)
- Pilot and payload operator
- Spotter for safety

DoD UAS Group Descriptions

UAS Groups	Maximum Weight (lbs) (MGTOW)	Normal Operating Altitude (ft)	Speed (kts)	Representative UAS	
Group 1	0-20	<1200 AGL	<100	Consumer and Commercial UAS, Raven (RQ-11), WASP	
Group 2	21-55	<3500 AGL	<250	ScanEagle	
Group 3	<1320	<FL 180		Shadow (RQ-7B), Tier II/STUAS	
Group 4	>1320		Any Airspeed	Fire Scout (MQ-8B, RQ-8B), Predator (MQ-1A/B), Sky Warrior ERMP (MQ-1C)	
Group 5		>FL 180		Reaper (MQ-9A), Global Hawk (RQ-4), BAMS (RQ-4N)	

Basic UAS Threat Categories



Payload Delivery

- Nefarious payload (in addition to camera)
- Difficult to confirm until after payload release
- Examples: bombs/CBRN on targets or contraband to a prison

ISR

- Used to gather intelligence of any kind
- ID timing and location or capture images
- Includes directing fires

Nuisance

- Wrong place, wrong time
- Likely the majority of threats perceived in US for now

Counter-UAS (C-UAS) Response Actions

Types of Detection in the Market – Layered Solution Provides Best Results

Product	How It Works	Advantages	Disadvantages	Comments
Radio Frequency 	• Picks up uplink/downlink from controller and the drone	• Very low/no false alarms with a high quality RF sensor • Long ranges are possible • Cost effective even for long range	• Doesn't pick up drones outside of its RF signatures library • Requires regular signatures database update	• RF Direction Finders are best - "Omnidirectional" RF sensors are common, but of limited use as don't show location of the drone • Pilot location is usually not available - no direct line of sight
Radar 	• Essentially, a "motion tracker" • 3D versions can also show object elevation	• Able to pick up drones without RF emissions • A single radar can track multiple targets	• Prone to false alarms despite filters • Longer range drone detection is usually expensive, large size and/or compliance restricted	• Most C-UAS radars in the market were designed for ground surveillance, so have very low vertical coverage – 15-30 degrees, creating large gaps • "Mini doppler" filtering is generally overhyped
Camera 	• Visually identifies a drone	• Best used for verification / classification and tracking of a target detected by other sensors	• Not well suited for detection due to FOV vs distance trade-off • Reliable tracking remains difficult	• Thermal generally performs better than traditional daylight optics across most conditions
Acoustic 	• Listening for drone blades/engine sounds	• Passive, cost effective	• Short detection distances, prone to false alarms	• Tends to work by either comparing to a signature database or artificial intelligence (early stage development

Defeat Options

- **The general consensus today is for a layered solution for both detect and defeat, with jamming as its core non-kinetic defeat component**

Hard Kill

- **Hard to target the drone**
- **Collateral damage potential, either from the weapon or the drone/drone's payload**

Cyber / "Protocol Manipulation"

- **Relies on hacking a particular protocol – not a universal tool**
- **Protocols will only become more encrypted in the future**

Spoofing

- **intermittent effectiveness, higher collateral damage**
- **To guide, need drone location and steer without its path info**

Defeat Options

Snagging

- Generally slow to deploy, not practical
- Not effective against swarms
- Collateral damage remains

Birds of Prey

- Animal cruelty – danger to the animal
- Not effective against larger drones such as DJI Matrice
- Needs feeding!

Jamming

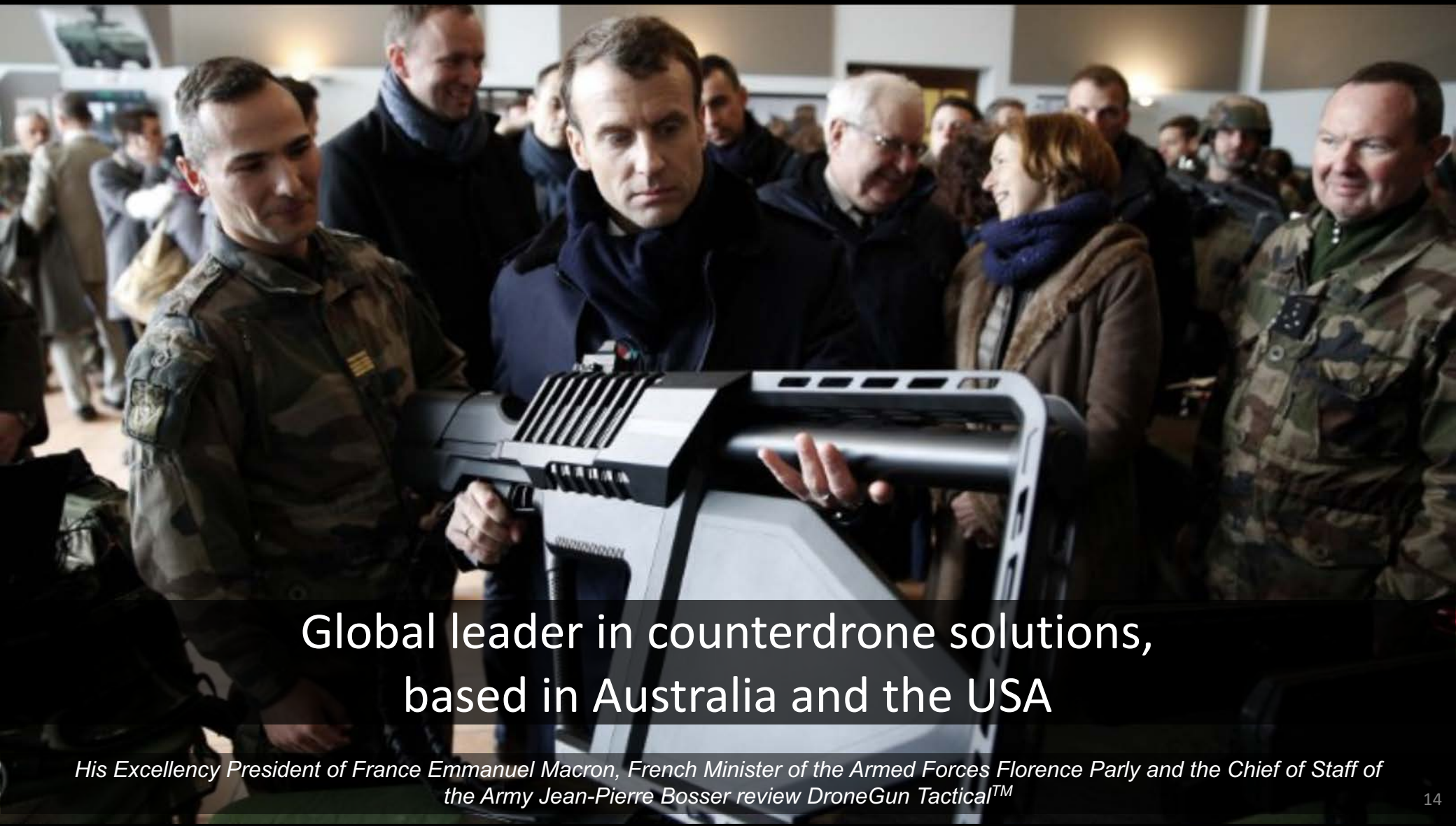
- Universal – with the right jamming technology, all drones on affected frequency bands will be neutralized
- Effective against swarms
- Manually changing communication band ranges is substantially difficult
- All drone countermeasures, not only jamming, are not permitted for most users

Why Detect if I Don’t Defeat?

- **Detection provides insight into the overall threat. Knowing the threat is present is key**
- **Detection also allows for an informed soft response - move people indoors, into hard cover if a payload is observed, etc**
- **Detection protects aircraft, troops and other sensitive items in high risk areas**
- **Detection enables a response towards the pilot by tracking origination point and a response to the UAV mission site**

DroneSentinel™ overlooking a facility

Global Counterdrone Solution Leader



Global leader in counterdrone solutions,
based in Australia and the USA

His Excellency President of France Emmanuel Macron, French Minister of the Armed Forces Florence Parly and the Chief of Staff of the Army Jean-Pierre Bosser review DroneGun Tactical™

DroneShield at a Glance

Location

Sydney, Australia
Virginia, USA
Washington DC, USA

Team

13
Employees

Patented

Deployed

Multiple deployments by government users globally

International

60
Distributors across 50 countries

Recent Activity

DroneShield's WideAlert deployed at 2017 Boston Marathon

DroneGun Tactical™ reviewed at the Spanish Ministry of Interior

European trials 2018

Canberra Demo 2017

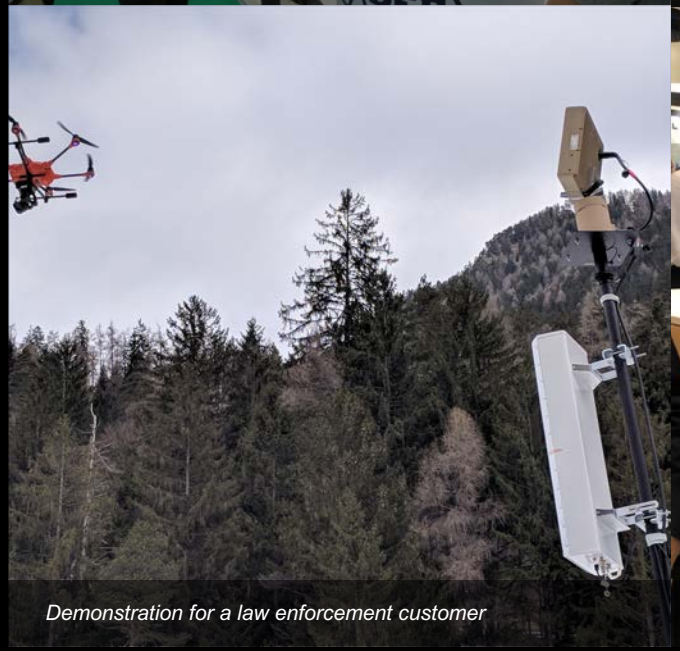
Major General Kathryn Toohey (Head of Australian Land Capability) with DroneGun MKII

DroneShield's RfOne at Winter Olympics 2018

Recent Activity

Admiral Molina, Commander in Chief of the Chilean Navy, reviewing DroneGun MKII™

DroneShield receiving CivSec 2018 award for DroneGun™ design



Demonstration for a law enforcement customer

Hon Christopher Pyne (Australian Minister for Defence Industry) with DroneGun Tactical™

Recent Activity

Queensland Police Service officer with DroneGun MKI™ at 2018 Commonwealth Games

DroneSentry European prison trials

DroneShield protects 2017 Hawaii IRONMAN


DRONEFORSVARSSELSKAPI NORGE

Stor interesse for droneforsvar

– Det haster for flyplasser og fengsler

An Established Player in the Market

- **Has made early international sales, including a $3m+ order in June 2018 from a Middle Eastern Ministry of Defence - the largest known global order for tactical drone mitigation equipment**
- **Actively present in over 50 countries**
- **Limited number of readily-available competing products**
- **Land grab is on, significant first mover advantage**

South Korean military reviews DroneGun™

An Established Player in the Market

- **Unique global positioning in a growing market – an Australian company with operations in the U.S.**
- **Multiple end-user trials have been and are being undertaken by governmental organizations globally**
- **Products have been modified in response to end-user requirements**

Queensland Police Service officer with DroneGun MKII™ during Commonwealth Games in Brisbane

Complete Solution – Products Available Today

- **DroneGun™ – portable rifle style drone countermeasure**
- **DroneSentinel™ – radar, RF, thermal and optical sensor drone detection**
- **DroneSentry™ – DroneSentinel™ with a built-in countermeasure**

DroneShield's Competitive Advantage

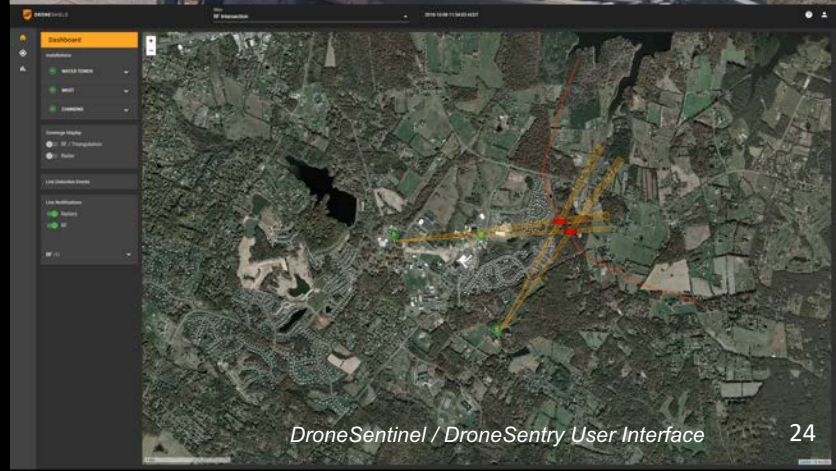
- **Most products purported to be in the market are either ideas/early prototypes, or expensive military systems originally designed for another purpose**
- **DroneShield's solutions are:**
  - **High quality**
  - **Mature and fielded globally, incorporating feedback from numerous end-users**
  - **Modular**
  - **"One stop shop"**
  - **Designed and made in the US or US allies**
  - **Cost effective**
- **DroneShield continues to invest significant funding in its R&D to ensure ongoing leadership in the counterdrone market**

DroneGun Tactical™

- **Universally targets a wide range of drones**
- **1-2km effective range**
- **2.4Ghz, 5.8Ghz, 433Mhz, 915Mhz and optional GPS**
- **No need for software updates**
- **Directional impact**
- **Operating temperature: -4F to +131F (-20C to +55C)**
- **Weight: 16 pounds (7.3kg) including 2 batteries**
- **NATO-standard US-made batteries**
- **Designed to IP54**
- **SAR safety certified**

DroneSentinel™ and DroneSentry™

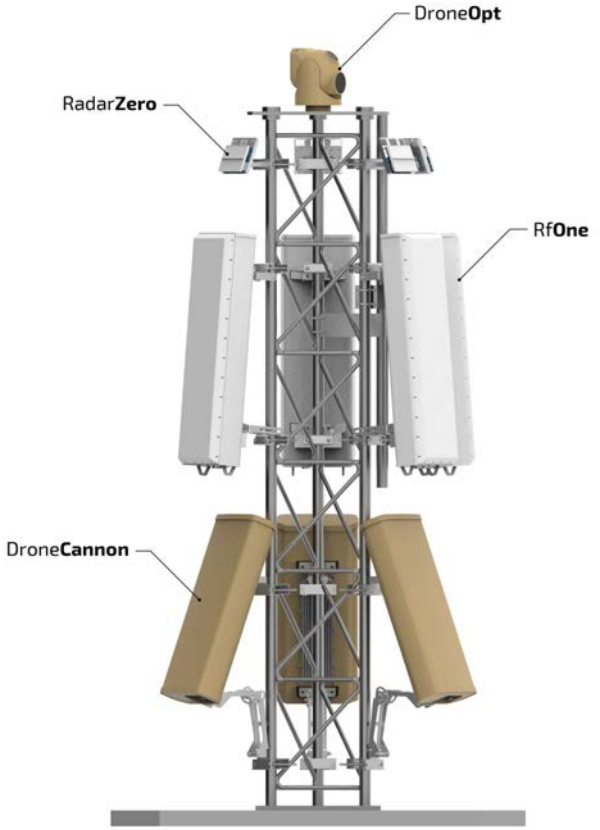
- **Up to 5km detect and 2km defeat**
- **Multi-sensor**
- **Intuitive and easy to deploy interface**
- **Modular – fast to set up and tear down**
- **Portable**
- **Works through on-site server or via cloud**
- **Cost effective**
- **Evaluated by U.S. Marine Corps during U5G 2018 trials at Camp Pendleton (report available to DoD recipients)**



DroneSentinel / DroneSentry User Interface

DroneSentinel™ and DroneSentry™

- **RfOne advantages:**
  - **RF Direction Finder with triangulation capability**
- **RadarZero advantages:**
  - **Very small (paperback size)**
  - **80 degree vertical angle (120 degree horizontal)**
  - **Fixed panel – no moving parts**
- **DroneCannon advantages:**
  - **90x90 degree impact**
  - **Covers 2.4Ghz, 5.8Ghz, 433Mhz, 915Mhz and optionally GPS**



DroneSentinel™ / DroneSentry™ Schematic

Technology Roadmap

Contact Details

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Disclaimer: DroneGun Tactical, DroneCannon, DroneCannon RW and DroneSentry (collectively, "Countermeasure Products") have not been authorized as required by the United States Federal Communications Commission ("FCC"). These devices are not, and may not be, offered for sale or lease, or sold or leased, in the United States, other than to the United States government, its agencies, and its properly delegated representatives, until such authorization is obtained.

The use of Countermeasure Products in the United States by other persons or entities, including, in certain circumstances, state or local government agencies, is prohibited by federal law. Laws limiting the availability of Countermeasure Products to certain types of users may apply in other jurisdictions, and any sales will be conducted only in compliance with the applicable laws.

DroneSentinel™