16 January 2017   **ASX RELEASE**

DroneSentry Product - Integrated Drone Swarming Detection and Countermeasure

- **DroneShield is developing next generation *integrated and automated* drone detection and countermeasure product.**
- **Product involves *automatic* deployment of jamming countermeasures following detection.**
- **Particularly relevant to "swarming" drone attacks.**

DroneShield Ltd (ASX:DRO) ("DroneShield" or the "Company") is pleased to announce that it has commenced work on the development of DroneSentry, an integrated drone detection and countermeasure product.

Currently, DroneShield sells two key categories of products. The first category is acoustic drone detection systems, including long range dish sensors, with each sensor providing a 30 degree detection cover for up to 1km range. The second is DroneGun, a drone jammer, effective at distances of up to 2km. Currently, the detection and the jammer products are operated independently. The existing DroneShield detection product operates automatically but, once triggered, requires "man in the loop" to operate the jamming.

Once DroneSentry's development has been completed, DroneSentry will integrate the two existing and effective products into an *integrated and automated* system. It will consist of a block of several DroneShield's long range dish sensors (providing 360 degree coverage), coupled with a synchronized jamming system. Once DroneShield's sensors detect an incoming drone, the jamming system will then automatically engage it. DroneSentry will also carry the optional "man in the loop" feature allowing for manual operation of the jammer at the user's option.[1]

Image: DroneScentry (artist's rendering)

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[1] Development of DroneSentry has commenced, however, it has not been, and there are no guarantees that it will be, completed or that if and when completed DroneSentry will be capable of being commercially exploited. DroneGun has not been authorized as required by the United States Federal Communications Commission ("FCC"). This device is 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 and its agencies, until such authorization is obtained. The use of DroneGun or (once completed and commercially offered) DroneSentry in the United States by other persons or entities, including state or local government agencies, is prohibited by federal law. Laws limiting the availability of DroneGun and DroneSentry to certain types of users may apply in other jurisdictions, and any sales will be conducted only in compliance with the applicable laws.

The system is expected to be particularly relevant to the rising military demand. By way of background, the U.S. Army has been reported as having identified a "critical gap" in its ability to face "swarms" of drones, and other militaries face the same issues. Drone "swarming" refers to large numbers of cheap, commercially available drones attacking a target simultaneously from a number of directions and overwhelming the target's defences. Because of the low cost of commercially available drones, planners anticipate that both state actors and non-state terrorist actors will be able to utilise drone swarming in the near future. Drone swarming's targets include forward-operating and more permanent military bases and other critical defence and infrastructure installations. By way of example, on 9 January 2017, the Strategic Capabilities Office of the United States Department of Defense, together with the Naval Air Systems Command, announced a successful demonstration of a large drone swarm.[2]

Conversely, The Washington Post has recently reported General Daniel B. Allyn, the U.S. Army's vice chief of staff, as saying that defeating drone swarm attacks will be essential in the future.[3]

Several prime (top tier) U.S. defence contractors are working on anti-swarm systems. For instance, Lockheed Martin has stated that "Lockheed Martin engineers are collaborating with customers and academia to research, develop and implement the technology that will detect and defeat swarms."[4] Unlike DroneShield's, that technology is understood to emphasise high-cost laser countermeasures rather than the substantially lower cost jamming.

Image: DroneScentry's deployment (artist's rendering)

With the addition of DroneGun to its product offering in the recent weeks, the Company became the only global provider of a comprehensive drone security system that includes both world-leading acoustics-based detection and highly effective and easy to use handheld rifle jammer countermeasures. Development of DroneSentry will take the Company a substantial step forward and, once completed, will enable it to compete at the higher end of the market.

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2 https://www.defense.gov/News/News-Releases/News-Release-View/Article/1044811/department-of-defense-announces-successful-micro-drone-demonstration
3 https://www.washingtonpost.com/news/checkpoint/wp/2016/06/21/the-army-has-a-critical-gap-stopping-drone-swarms-now-its-doing-something-about-it/?utm_term=.9ff4c82ec37b
4 http://www.lockheedmartin.com/us/innovations/061416-webt-laser-swarms-drones.html

The Company has identified several other gaps in the drone security market and is developing its product roll-out plan, beyond its existing suite of products. The Company will announce commencement of development of additional products (if any) and launches of additional products (if any), as they occur.

Annexed to this announcement is the Company's presentation setting out additional details on DroneSentry.

Further Information

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About DroneShield Limited

Based in Sydney and Virginia, DroneShield is a worldwide leader in drone security technology. The Company has developed the pre-eminent drone security solution that protects 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

DRONESHIELD

DroneShield® DroneSentry

Stage: In Development   January 2017

How does DroneShield® integrate detection & countermeasures in an automated solution?

By merging the functionality of the DroneShield® Long Range Sensor and the DroneShield® DroneGun, DroneSentry is a product that detects multiple drone targets and disrupts a single or swarm drone attack by jamming RF and/or GPS.
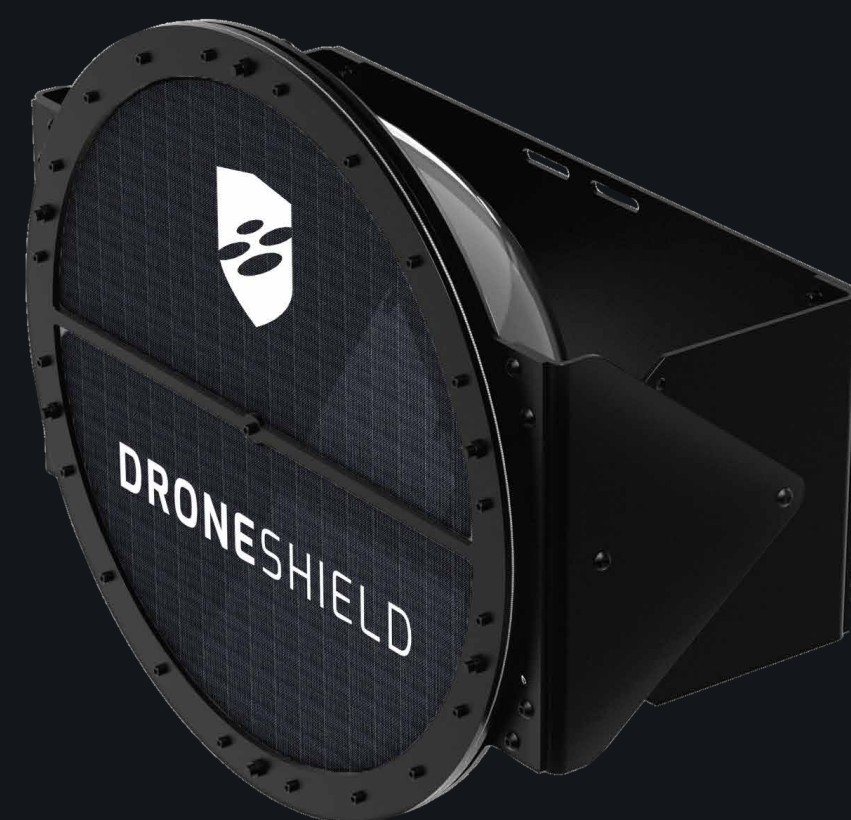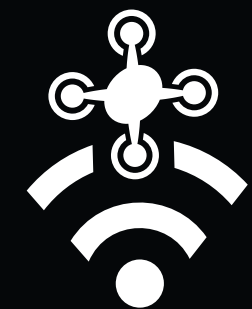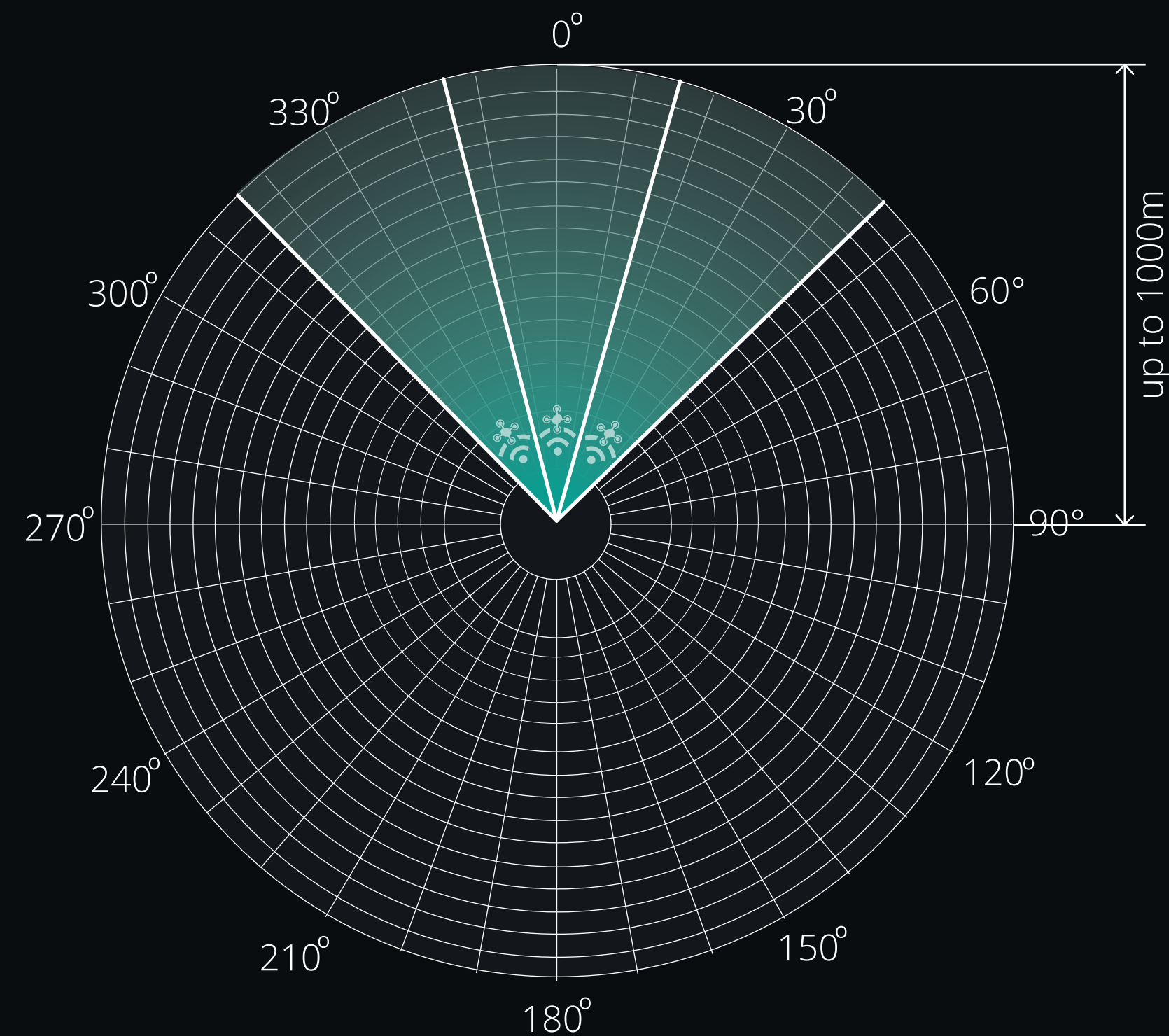
DRONESHIELD

Long Range Sensor Integration

The DroneShield® Long Range Sensor can detect drones in a 30° cone up to 1km away.

By mounting 3 Long Range Sensors, DroneSentry effectively covers a 90° area, up to 1km range.

DroneShield®
Long Range Sensor

DroneShield® Long Range Sensor

up to 1000m

Detection Zone created by 3
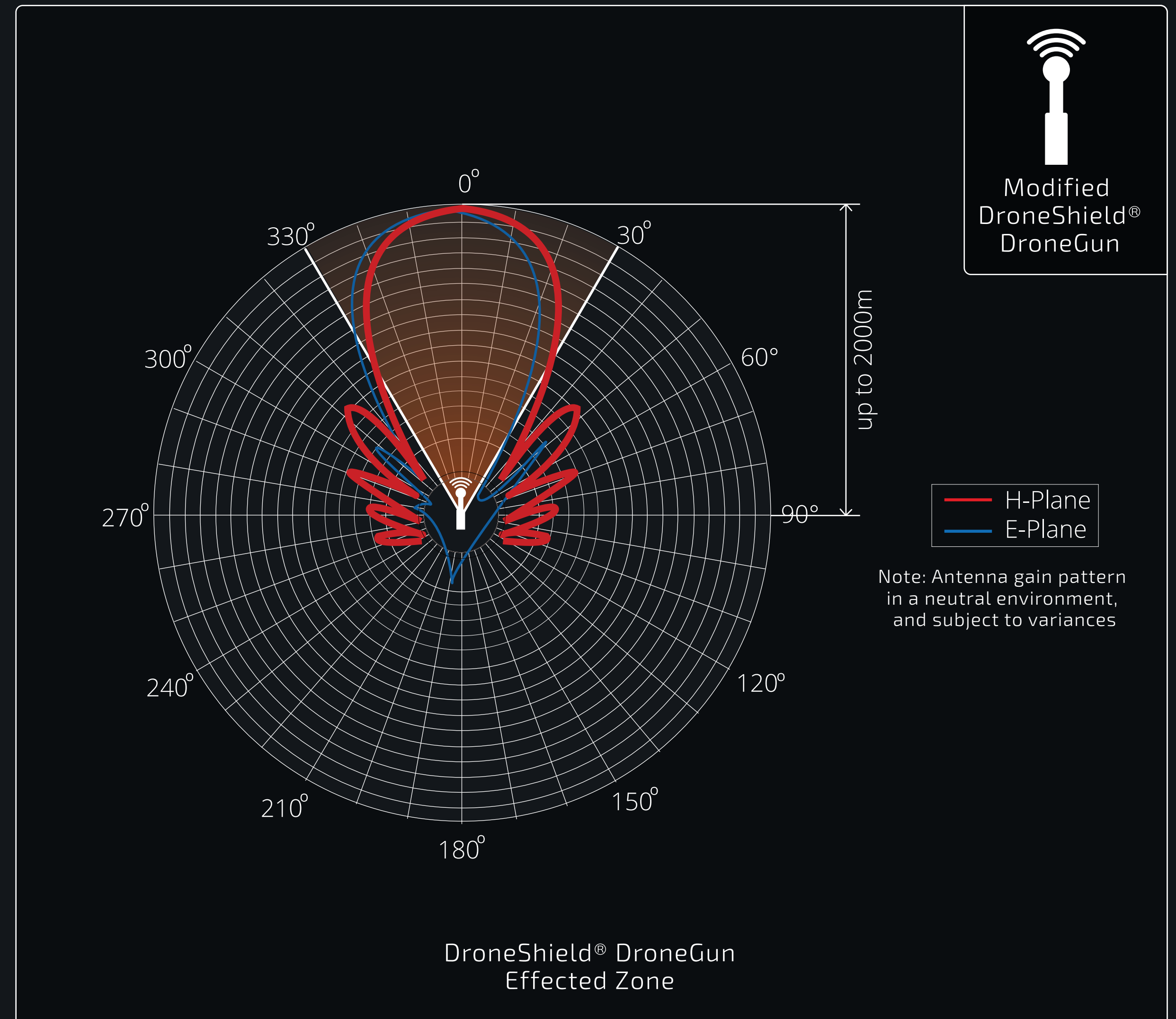DroneShield® Long Range Sensors

DroneGun Integration

The DroneShield® DroneGun has an effective range of up to 2km. The effective arc of the DroneGun can be seen in the illustration (right).

DroneShield®
DroneGun

Modified
DroneShield®
DroneGun

up to 2000m

H-Plane
E-Plane

Note: Antenna gain pattern
in a neutral environment,
and subject to variances

DroneShield® DroneGun
Effected Zone

DRONESHIELD

DroneShield® DroneSentry Effective Range

By combining the 3 DroneShield® Long Range Sensors and 2 modified DroneGuns, DroneSentry can provide effective detection and protection against attacking drones within a 90° zone up to 1000m.

Multiple DroneSentry units provide comprehensive protection against swarm attacks.

Detection & Effected Zone created by DroneShield® DroneSentry

DroneShield® Long Range Sensor
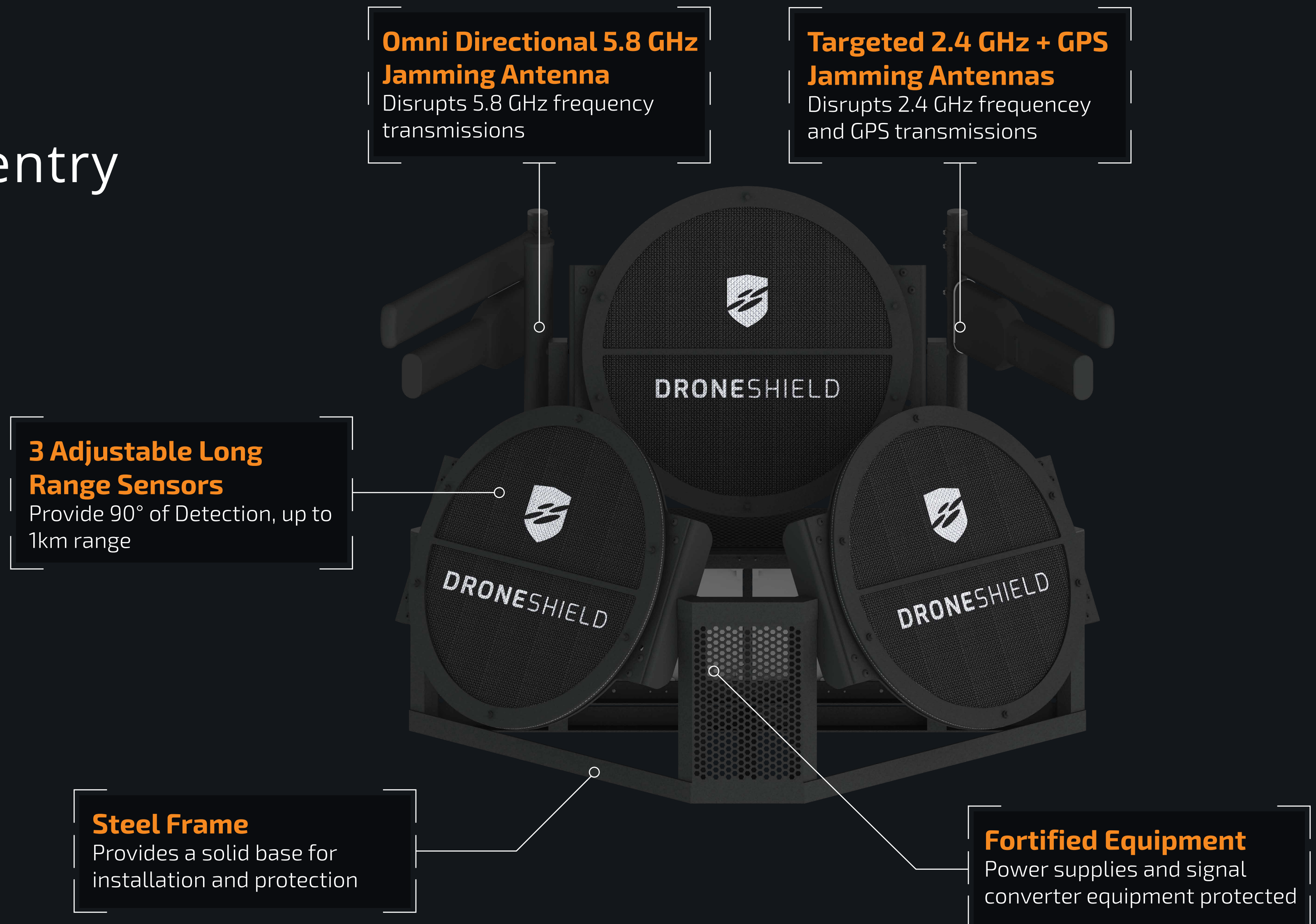
Modified DroneShield® DroneGun
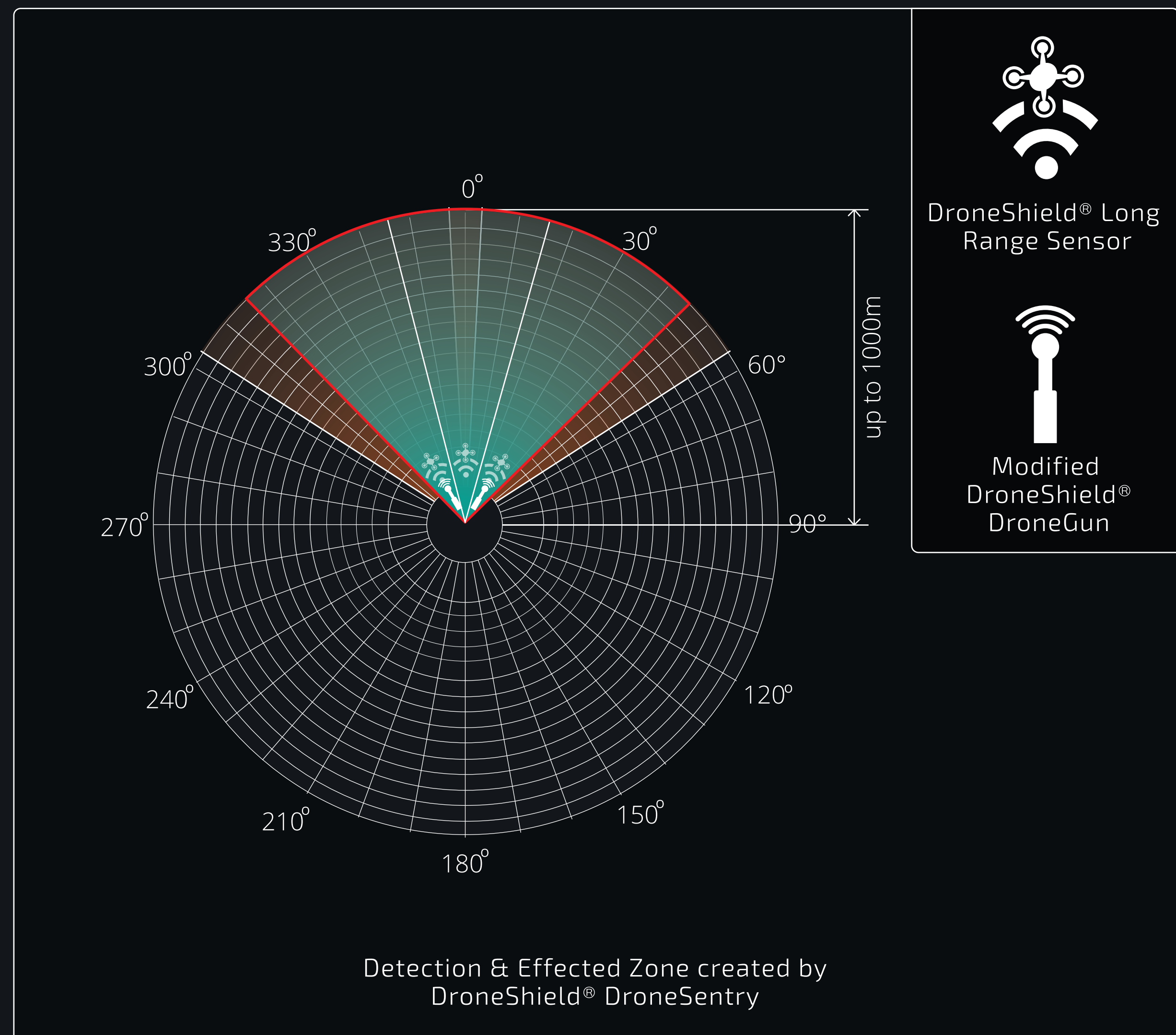
Introducing the DroneShield® DroneSentry

A modular product has many tactical advantages. Clients are able to set up, defend, transport and reassemble each module quickly with limited man power and space requirements.

A modular system can also be used for more advanced tactical response for example setting up modules in front of likely drone flight paths or as a defensive tool when moving on a target.

A smaller module approach also offers the client more positioning options.

Omni Directional 5.8 GHz Jamming Antenna
Disrupts 5.8 GHz frequency transmissions

Targeted 2.4 GHz + GPS Jamming Antennas
Disrupts 2.4 GHz frequencey and GPS transmissions

3 Adjustable Long Range Sensors
Provide 90° of Detection, up to 1km range

Steel Frame
Provides a solid base for installation and protection

Fortified Equipment
Power supplies and signal converter equipment protected

DRONESHIELD

Multiple Unauthorised Drones Detected
DroneSentry Activated

Drone Jamming
RF + GPS Jammers disrupt the flight of the drone threats

Drone Detection
Proprietory Acoustic Detection Recognises Drone Sounds

Analysis & Response
Acoustic sample is compared to propriety database, the client is alerted in real time

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thank you.

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