



Drones

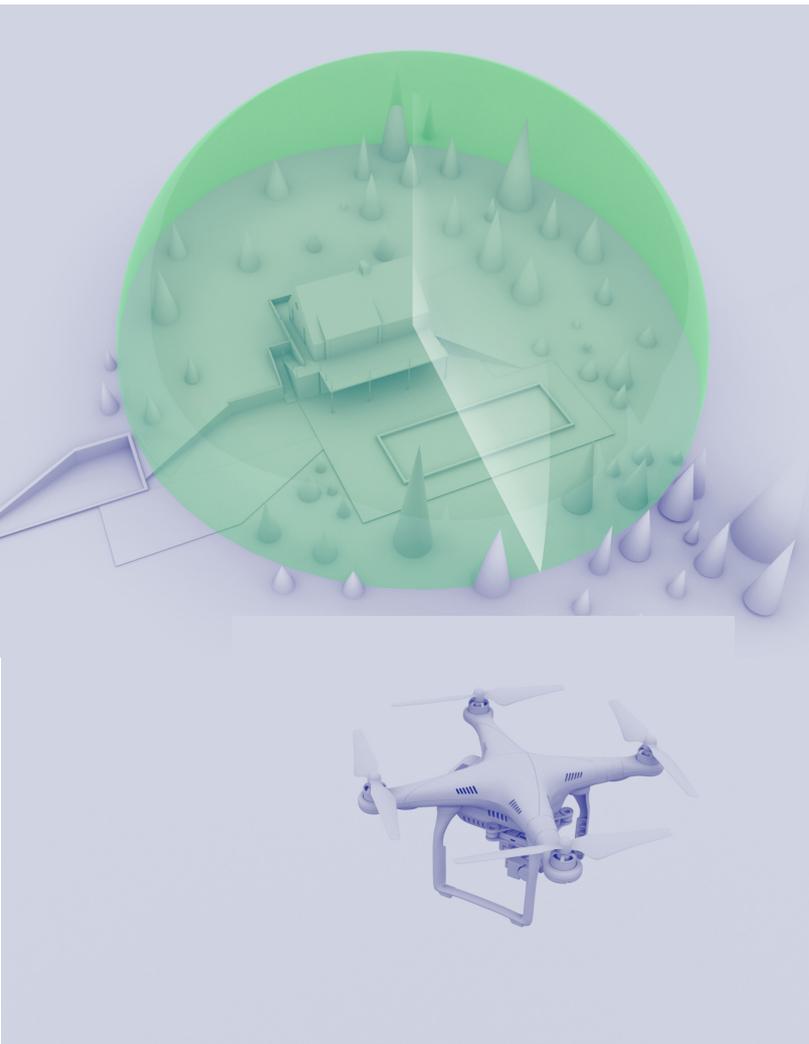
– **Accur8vision** is shedding a new light on the security and safety world for its ability to now track an intruder or object the entire time. This is bringing a more sustainable and secure world to all aspects of life.

Drones have become a hot commodity in the last few years. The more places people travel to the more places there are signs stating that no drones are allowed. Not only is it pesky for normal everyday people but it is also a problem in regard to security. Many drones come with high end cameras that can record or take pictures. This is a big risk for high end infrastructure like nuclear power plants and government divisions.

With accur8vision and the use of lidar technology, it is possible to create something like a virtual net. This virtual net creates laser beams in a pattern where it is impossible for a drone to fly through it without activating an alarm. It is also possible to track the trajectory of the drone so that it is visible to see exactly which direction the drone came from.

- + Can accur8vision track a drone?
- + Is it possible to use lidar to detect drone?
- + Can accur8vision protect against drones?

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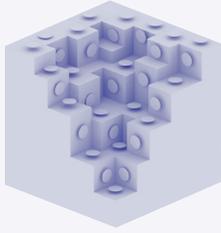
Using accur8vision against drones was successful. With the lidar beams interweaving together causing a sort of web design made it feasible to detect the smallest of drones. The number of lidar used differentiates between the needs of the area but the detection of the drone was realistic.

Placing lidars at an angle over what needs to be protected causes the laser beams to be more distributed towards the sky causing a network of laser beams. A security zone inside accur8vision was then placed on top of the building that needed to be protected. Once the drone was inside the security zone an alarm was activated.

This technology, accur8vision, was able to detect a drone and alert the operator that there was a drone on premises.

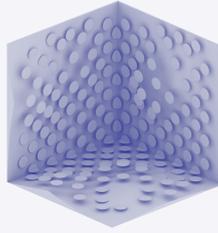
Drone detection is possible when using accur8vision which consists of lidars and security zones.

The drone wasn't able to go undetected once it flew into the area of the lidar and the security zone.



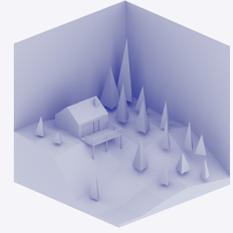
Volumetric Detection

This system offers full spatial detection surveillance of an entire area compared to line circuit detection in the classical parametric systems.



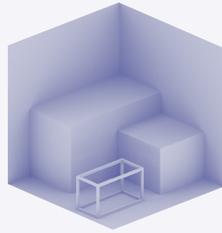
Lidar Technology

With the use of lidar, the system knows the exact position of the object in the real environment and portrays the intruder in the 3D map in the exact same position.



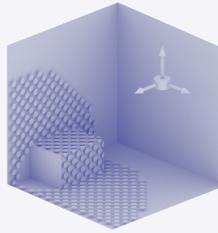
Three Dimensional Map

The map is the exact replica of the real environment and contains anti-collision measures which allows movement inside the map. It also serves as a unique coordinate system.



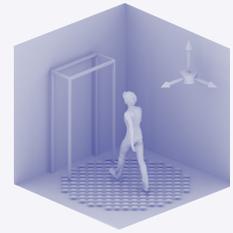
Security Zones

3D zones are areas that activate the alarm and showcase the intruder's trajectory and speed. Different types of zones and priorities can be set.



Planning Tools

When placing cameras and lidars into the 3D map, the planning tools will show you the areas that are covered and the areas that are not.



Virtual Reality

The system has the ability to allow a virtual walk through of the map with a virtual intruder to test the security designs.

About accur8vision

Accur8vision is a volumetric detection system that uses lidar technology to safeguard entire areas instead of only the perimeter. If an intruder enters the guarded area, the system is notified. The operator or guard will have information based on the exact location, size, and speed of the intruder. Even the trajectory of their movements will be known.

Detection is performed by advanced lidar technology with the use of multichannel detectors (16 to 128 beams). Laser rays spread out into the area (radius range of some detectors reaches up to 300m). The times of reflections from fixed obstacles are measured (the laser is moving at the speed of light), and based on these measurements, the obstacle's distance from the detector is calculated. One detector performs several hundred thousand measurements per second. The accuracy of the detection is 2 to 3 cm.

Since we strongly believe in the idea that the real world is three-dimensional, our system must be three dimensional, also. That is why accur8vision has a 3D map environment that precisely imitates a real environment. The map can be uploaded using photogrammetry technology. The acquisition of the map is simple and can be handled by the end user themselves. The map is then scaled and will correspond directly to the reality.

In the system, individual security components (cameras and detectors) can be inserted very easily by the drag and drop system. The patented technology ensures that the PTZ cameras are automatically rotated to the alarm location. The alarm occurs when the intruder enters the zone. The zone is a 3D area that has width, height, and depth. The zones are very simple and are shown in the 3D map. Each zone may have different alarm priorities. In each zone, objects that could generate false alarms (ex: trees) can be easily cut out. It is also easy to create corridors in which movement does not trigger an alarm. The advantage of the system is that the zones have many different variables. In the morning, the perimeter may not be guarded but in the evening, it will be.

By setting the detection, alarms will ignore objects smaller or larger than the specified limit. This allows very small animals to be ignored or, for example, not responding to a passing train. The whole system intelligently scans the area to be guarded. These scans can be set for a period of time, with zone scans responding later to the change in vegetation (grass, shrubs, trees), to relieve the customer of unwanted false alarms. All in all, accur8vision is a very unique and robust security system that is the future for the security world.

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