

# COUNTER UNMANNED AERIAL VEHICLE (CUAV)

Man portable, field deployed fire-and-forget CUAV.

Exploiting the full capabilities of My Sky Technologies multispectral microsensor suite. This Counter UAV solution detects, classifies and engages potential airborne threats.

The proprietary sensor fusion allows the microsensor suite operation in highly sensor hostile environments, Making use of all available data including Visual(night and day), Far IR, Radio frequency, and acoustic.

Multiple methods of hard and soft-kill engagement, including Jamming, Take-over, target denial, and kinetic engagement.



## SPECS

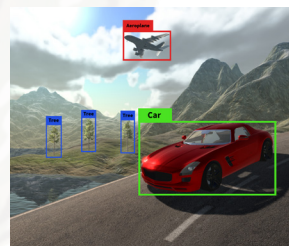
Range	8000m
Height Ceiling	5000m
Flight Time	180 s
Max Engagement Speed	250 km/h
Weight (no payload)	600 gm
Size (folded)	250mm x 100mm



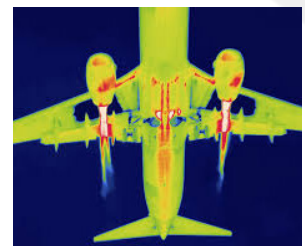
SUAS



GROUND SURVEILLANCE



MACHINE LEARNING SYNTHESIS



INTEGRATED SENSOR FUSION



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SENSOR TECHNOLOGIES

# SMALL UNMANNED AERIAL SYSTEM (SUAS)

Dual-role man portable aerial surveillance system for close in rapid deployment as well as long rang stealth monitoring. The unique dual-role nature of the Mysky SUAS makes it the first choice in dismounted field operations. Allowing deployment of our proprietary micro sensor suite and sensor fusion into a hasty dismounted situation as well as long loiter time FOB operations.

The VTOL capable small form factor quad style drone can be rapidly deployed form behind cover and gives up to 30 minutes of tactical situational awareness. With the addition of high performance composite wings and ducted fan technology the same microsensor suite can provide covert high altitude reconnaissance and will autonomously or semi-autonomously search out threats, record sensor data internally or beam back via secure encrypted data link.



## SPECS

SigInt	400MHz-10GHz
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Visual 180deg Field of View	1m2 at 1000m
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Acoustic ballistic direction finding	
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Near and Far IR image fusion	
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Photonic enhancement for night sensing	
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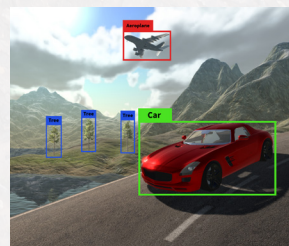
GPS denied navigation	
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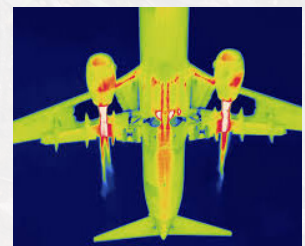
CUAV



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# GROUND SURVEILLANCE

Traditional Security systems can't detect fast moving incursions, such as drones or other flying objects. Regardless of the number of cameras operating, without a sufficient number of operators what would otherwise be a surveillance and detection system becomes a video evidence gathering system. Machine Learning detection systems given access to the same video information as the operators provides the capability to screen hundreds of cameras for targeted objects or behaviour and raise an alert in near-real-time.

The object detection and classification systems developed by My Sky Technologies can leverage existing CCTV or imaging systems, and provide well characterized object and feature detection capabilities. Coupled with machine training capabilities, clients can grow their capabilities without having to grow their physical camera network.

Most commercial detection systems concentrate on a single technology, sometimes two technologies from disparate vendors. In many cases these are systems from a military use-case "brought down" to solve a public safety or security concern. These are often encumbered with the expense of military type systems, and in the case of surveillance RADAR raises compatibility and legal concerns with usage in an urban environment. By using a selection of passive sensing systems together with intelligent multi-sensor fusion, objects of interest are located and tracked both more efficiently and cost-effectively.

The air surveillance system-of-systems incorporates the whole of My Sky Technology's efforts: Deep Neural Networks trained with our dataset generation technology, paired with multi-sensor fusion. A network of these sensors may be placed around a facility to ensure that nothing is beyond your sight.

- Jail Defence
- Stadium Defence

- Airport Safety
- Facility Defence

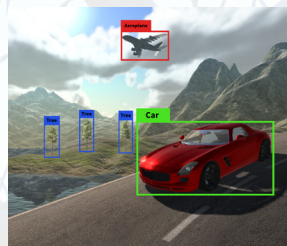
- Major Events



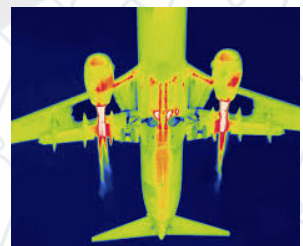
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# MACHINE LEARNING SYNTHESIS

MySky Technologies is using cutting edge machine learning to classify and track aerial and terrestrial targets. We have developed in house neural network visual training technology to to autonomously create millions of highly realistic images with tagged Objects of Interest.

Generation of high quality training sets for Machine Learning algorithms is recognized to be one of the most complex and labor intensive tasks in the network training process. In many cases images or video must be painstakingly hand-annotated by a human to ensure training set data of sufficient quality and fidelity for optimum neural network performance.

MySky Technologies has augmented the expensive and labor intensive practice of developing annotated data sets with a proprietary Visual Content Creation Toolchain (VCCT). This offers a continuum of capability for synthetic training data generation. This system offers:

## Fully synthetic image sets

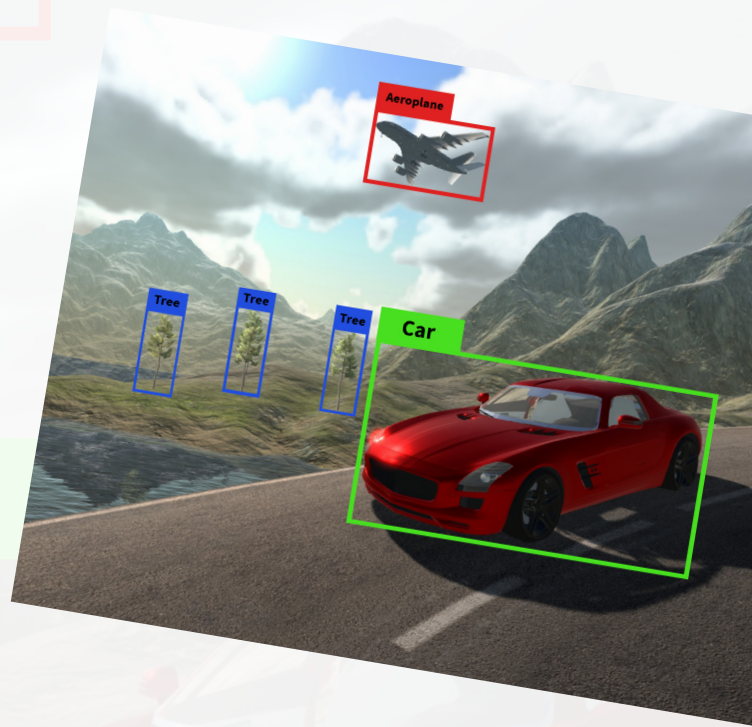
Images of highly detailed 3D models are rendered in a highly realistic virtual environment. This provides the utmost in flexibility, as practically all environmental conditions and model orientations may be manipulated automatically in software. This includes realistic season and time of day environmental data for physical locations, weather, and object orientation.

## Semi-Synthetic Image sets

Similar to a fully synthetic dataset, but using highly detailed 360-degree camera images of the desired environment. 3D models are positioned within this environment in a realistic way to provide an ensemble of training images that are in the client's specific context of interest.

## Intelligent compositing

Using high resolution photographs, 360-degree image capture, and sophisticated computer image manipulation, virtual scenes are composited using real objects in real environments. This approach trades the flexibility of the synthetic generation methods for high detail fidelity and contextual awareness.



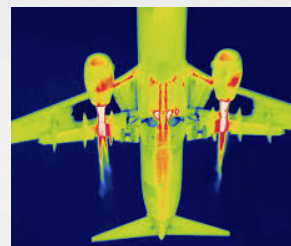
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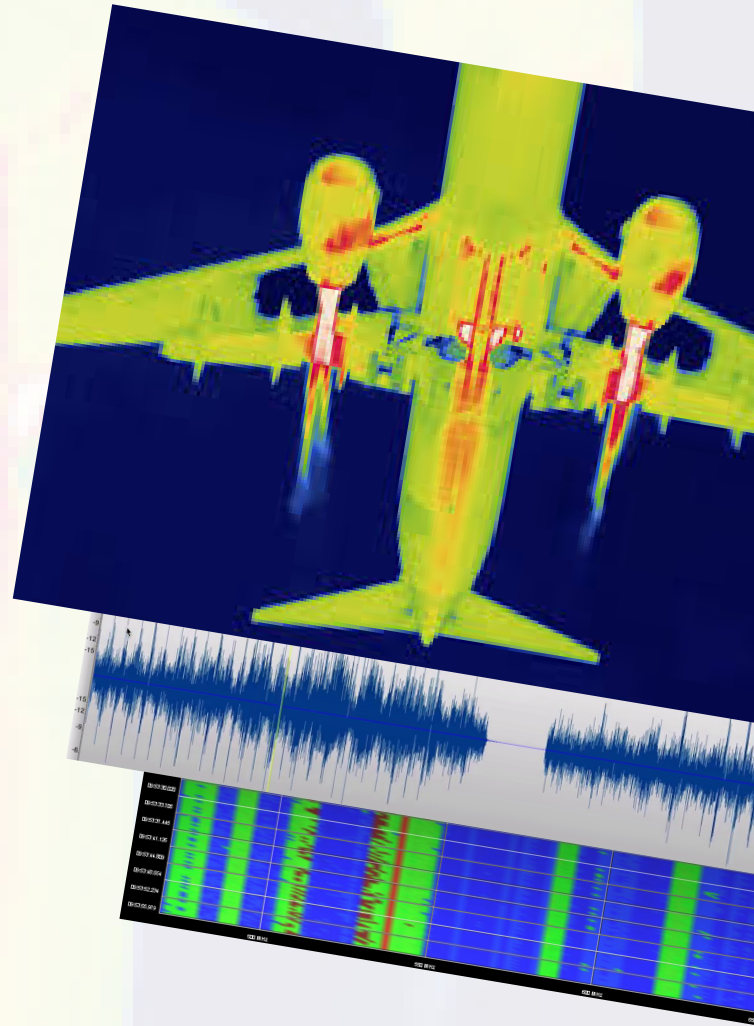
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# INTEGRATED SENSOR FUSION

The My Sky Technologies multi-spectral sensor suite provides state of the art situational awareness in a wide variety of situations, including civil, security and military environments. The suite is supported by cutting edge data fusion and tracking software, which combines proven statistical inference methods with innovative machine learning algorithms and deep learning networks. The system is computationally efficient and is specifically designed to run on low power embedded platforms.

The data fusion and tracking software developed by My Sky Technologies fuses data streams from a fully customizable set of passive sensors to create a unified situational awareness picture for ground and airborne applications. By combining data from different sensors including video, audio, thermal and electromagnetic, more information about the environment and the possible threats can be extracted than from each individual sensor. In addition, the passive nature of the sensors ensures that the sensor platform remains undetectable to adversaries.

Finally, an intuitive and flexible GUI facilitates quick decision making in cluttered environments and ambiguous situations.



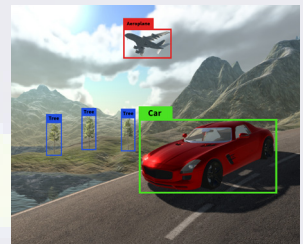
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