

<p>Proposed Area of Operations</p>	<p>From: 42°29'41"N 87°48'11"W OBK024017.7</p> <p>To: 42°29'41"N 88°16'26"W OBK321021.8</p> <p>To: 42°05'30"N 88°16'26"W OBK244016.4</p> <p>To: 42°05'30"N 87°41'58"W OBK127013.7</p> <p>But excluding the following two areas:</p> <p>Center: Waukegan Airport (KUGN) (Latitude: 42°25'20"N, Longitude: 87°52'04"W)</p> <p>Radius: 1.3 nautical miles</p> <p>Center: Chicago Executive Airport (KPWK) (Latitude: N42°06'52"N, Longitude: 87°54'05"W)</p> <p>Radius: 1.3 nautical miles</p>
	<p>Latitude: 42:17:00</p> <p>Longitude: 87:58:00</p> <p>Radius: 2-3NM</p> <p>Nearest Airport: KUGN</p> <p>Class of Airspace: D</p>
<p>Proposed maximum flight altitude (<i>above ground level</i>):</p>	<p>100 feet AGL</p>
<p>Description of your proposed operation (<i>Purpose of operation and method by which the proposed operation can be safely conducted.</i>)</p>	<p>Important Note: The requested area of operations and airspace authorization is accurately defined in response to the question on Proposed Area of Operations. It is unclear how this can be reflected on this form using the question on Airspace Authorization as the proposed area is intentionally not circular to avoid any encroachment on Class B Airspace for KORD.</p> <p>1. Purpose of Operation</p>

These operations are in support of the Lake County Major Crash Assistance Team (MCAT), a multi-jurisdictional agreement between 35 Illinois municipalities whereby resources are shared for the purposes of investigating and recording crashes that result in fatal or life threatening injuries or in which emergency services vehicles are involved.

The use of sUAS in support of emergency services at crash sites allows the capture of information that cannot be obtained from the ground and would not be practical or would be dangerous for a helicopter to obtain. Furthermore, by using sUAS survey techniques, road closure times can be dramatically reduced. This reduces secondary accidents, frees first responders for other duties more quickly and is generally in the public interest.

When major crashes occur, response needs to be timely. This request therefore seeks a waiver for a period of four years so that an sUAS operation can be launched when dispatched by emergency services. Based on past history, we would anticipate that there may be up to 160 serious crashes in the proposed area of operations over the two year period.

Due to the very nature of crashes, their time and location within the boundaries of the area covered by MCAT cannot be predetermined. This request seeks to provide the ability to operate at crash scenes should they occur in the surface area of Class D airspace. We would anticipate that over two years there would be no more than 2 (more likely zero) serious crash in the surface area of the Class D airspace defined for this proposed operation. This request further seeks the ability to operate at night. Based on past history, we would anticipate that there may be up to 80 serious crashes at night in four years.

2. Method by which proposed operation can be safely conducted

2.a Mitigation of Risks for Operation in Class D Airspace

The following risk mitigation steps will be strictly enforced:

- Traffic Pattern Altitudes are 800 feet AGL at KUGN and 1000 feet AGL at KPWK or greater. Both airports have a glide slope of 3°. As described in the Proposed Area of Operations, operations within Class D airspace will be limited to a maximum flight altitude of 100 feet AGL and a minimum distance from the identified airports of 1.3nm. Given the Traffic Pattern Altitudes and Glide Slope, manned aircraft at 1.3nm from the airport should not be below 400 feet on approach or takeoff.

- Maximum altitude will be set in the control application to ensure that the flight cannot unintentionally exceed the 100 feet AGL altitude limitation

- The DJI Phantom 3 Advanced implements geo-fencing that will further ensure that the sUAS does not encroach beyond a 1.3nm radius from the specified airports.

- Distance of the sUAS from the Remote PIC will be set in the control application and limited to 300 feet. By limiting the operating range of the sUAS, the amount of airspace that needs to be monitored by the Remote PIC for possible manned aircraft will be reduced accordingly and the entire area of operation can be monitored more closely.

- To further improve situational awareness, a VHF radio will be used to monitor control tower and CTAF communication.

2.b Mitigation of Risks for Operation at Night

- All operations at night will use at least one Visual Observer.

- The PIC and VO will be trained to recognize and overcome visual illusions caused by darkness, and understand physiological conditions which may degrade night vision.

- The surface area of the sUAS operation will be lit with a high intensity light tower and/or with lights from multiple emergency vehicles. This improves visibility of the sUAS for the Remote PIC, and will create a large and highly visible lit area that the pilot of a manned aircraft will recognize and avoid.

- As described in the Proposed Area of Operations, operations at night will be limited to a maximum flight altitude of 100 feet AGL and stay within the boundaries lit by the light tower and/or emergency vehicles.

- Maximum altitude will be set in the control application to ensure that the flight cannot unintentionally exceed the 100 feet AGL altitude limitation.

- Distance of the sUAS from the Remote PIC will be set in the control application and limited to 300 feet.

- By limiting the operating range of the sUAS in terms of altitude and range the amount of airspace that needs to be monitored by the Remote PIC is reduced and the entire area of operation can be monitored more closely.

- As already required for operations during civil twilight, anti-collision lights visible from a distance of no less than 3 nm will be used on the sUAS.

Training to prepare first responders for these operations would implement the same mitigation factors as set out above but would not be conducted in Class D airspace.