FAA
Part 107 and Public Aircraft Operations Certificate of Authorization and Waiver Guide

Gulf Coast Regional Public Safety Unmanned Response Team
and
Law Enforcement Drone Association (LEDA)

Copyright © 2021 GCPSURT All Rights Reserved

Introduction

According to Bard's Center for the Study of the Drone third edition of their Public Safety Drone Report, over 1500 agencies in the United States are using sUAS. As agencies research how to have a successful program, every agency inevitably has to make the decision as to which FAA waivers and authorizations they will need. Navigating the FAA authorization and waiver process can appear to be a massive undertaking. However the process, while tedious, is fairly simple with the right guidance. This guide was created to provide a very public safety friendly step by step walk through to obtain the waivers and authorizations that our teams have needed to respond to a vast majority of the incidents you will also face.

Over the many agencies I have come in contact with, one thing is common. Not all agencies need all the waivers or authorizations that another may need. For example, the Pearland Police Department currently uses 4 waivers (about to change to only 3 with the upcoming daylight operations changes). We have 2 Part 107 waivers and authorizations, an airspace authorization for the Class B airspace to the surface half the city resides in and a daylight waiver to operate at night. We also have 2 Part 91 or public aircraft operations authorizations, a Blanket Class G airspace authorization that includes flight over people and night operations; and a Jurisdictional authorization that allows us to fly at night, includes the TBVLOS add on, and flight over people. However, if your agency jurisdiction resides in areas that don't have controlled airspace, you wont need airspace authorizations. Also with the new daylight operation changes as of April 21st, 2021 you will no longer need daylight operation waivers.

Purpose

The purpose of this document is to provide a guideline for obtaining applicable FAA Authorizations and Waivers for government agencies for sUAS operations. For the purposes of this document, COW and COA will be used interchangeably.

Disclaimer

This document is designed for completion and submission of COA applications through the CAPS or Dronezone websites It should be noted that this document was created May of 2021. Depending on when the reader obtains the document and attempts to submit the applications, the regulations and/or restrictions and/or associated forms may have changed. The verbiage, item selections, and processes depicted and articulated in this document have been successfully approved by the FAA for multiple agencies. However, verbiage, item selections, and processes advised in this document may not fit your individual agency's needs, policies, or procedures and may require your own adjustment. The Gulf Coast Regional Public Safety UAS Response Team, LEDA, or its members do not in any way accept any type of liability associated with the waivers you submit. It is the applicant's responsibility to understand the requirements, restrictions, and regulations of the applications submitted.

It should be noted, the guidance set forth in this guide has worked for many agencies across the nation to obtain their waivers. However, what is true for one agency may not be true for all. You may or may not be granted the waivers or authorizations. Most denials that have been received were only for minor adjustments to certain verbiages that were unique to that agency. If you are denied for any reason feel free to reach out at uas@pearlandtx.gov and I will be happy to assist.

Copyright © 2021 GCPSURT All Rights Reserved

Gulf Coast Regional Public Safety Unmanned Response Team

For more information regarding GC-PSURT, visit our Facebook page at https://www.facebook.com/GCRPSURT

For requests to use this copy-right protected work in any manner, email uas@pearlandtx.gov.

Special Thank You and Notable Mentions

1) A huge thank you to Teddy Wisely with City of Wichita, KS. Teddy was the first person to help me walk through the CAPS process. Without his guidance and willingness to help me make my way through the process, I would not have been able to make these guides for you.

2) This guide would not have been possible without the guidance and support of York County Department of Fire and Life Safety Deputy Chief Chris Sadler. His guidance and recommendations were instrumental in obtaining our waiver. I greatly appreciate the willingness to help at any time we needed it.

3) This guide would also not have been possible without the guidance and support of Center for Robotics Assisted Search and Rescue President Justin Adams. His assistance in risk assessment and ConOp analysis provided us the ability to ensure our operations will be safely conducted and helped show the FAA panel the level of pre-planning that was conducted for the TBVLOS waiver.

4) I also would like to thank FAA Senior Aviation Analyst Steven Pansky and FAA Program Manager Michael O'shea for always being available and open to helping public safety agencies obtain guidance navigating the federal regulations. Your insight and assistance has been very much appreciated by everyone.

5) Michael Uleski with Daytona Beach Shores Dept. of Public Safety. The Part 107 verbiage he provided has helped me and many other agencies obtain their Part 107 daylight and airspace waivers. Thank you for sharing your verbiage and supporting documents.

6) Finally, Chris Grazioso with The Massachusetts Department of Transportation Aeronautics Division. Chris provided the verbiage for the 0 grid authorization, which I have used on several occasions for special events and training.

Copyright © 2021 GCPSURT All Rights Reserved

Table of Contents

Copyright © 2021 GCPSURT All Rights Reserved

FAA Waivers and Authorizations

Part 107

In 2016 the FAA issued advisory circular (AC) 107-2. Under section 5.19 of the AC the FAA described how the Certificate of Waiver (COW) process would take place and what regulations could be waived. Part 107 includes the option to apply for a Certificate of Waiver or Authorization (COW or COA). A COA will allow an sUAS operation to deviate from certain provisions of part 107 if the Administrator (FAA Reviewers) finds that the proposed operation can be safely conducted under the terms of that COA.

A list of the waivable sections of part 107 can be found in § 107.205 and are listed below:

- Section 107.25, Operation from a moving vehicle or aircraft. However, no waiver of this provision will be issued to allow the carriage of property of another by aircraft for compensation or hire.
- Section 107.29, Daylight operation. *** Now no longer needed if your initial or recurrent Part 107 certificate was taken after April 6th, 2021***
- Section 107.31, Visual line of sight aircraft operation. However, no waiver of this provision will be issued to allow the carriage of property of another by aircraft for compensation or hire.
- Section 107.33, Visual observer.
- Section 107.35, Operation of multiple small unmanned aircraft systems.
- Section 107.37(a), Yielding the right of way.
- Section 107.39, Operation over people.
- Section 107.41, Operation in certain airspace.
- Section 107.51, Operating limitations for small unmanned aircraft.

Taking the Part 107 path has its pros and cons. The benefits of only having Part 107 COAs is you wont have to do monthly reporting of all the deployments you conduct, like you have to do with Public Aircraft Operation COAs. Another benefit is the application submission system is located in faaDroneZone.faa.gov. This allows for a central location for all your waivers, aircraft registration, and accident reporting. Finally, under Part 107 you can fly for any event ranging from training to a catastrophic major incident (with the right coordinations). However, there are some shortfalls of only having Part 107 waivers. One of those shortfalls is part 107 vs PAO tends to be more restrictive. For example, under Pearland's single Jurisdictional COA we are able to fly in controlled airspace, at night, over people involved with the emergency, beyond visual line of sight, and not have visual observers. For you to be able to do all that under part 107 you will have to apply for each individual waiver and provide a concept of operations that is accepted by the FAA for each waiver.

Public Aircraft Operations (PAO)

PAO is also highly beneficial. As previously stated it is our recommendation that your agency have both. Just as with Part 107, the PAO path is not a catch all for all your operational needs. One of the biggest shortfalls of PAO, per Title 49 USC 40125, is you cannot use its authorizations for training or community events. You will need Part 107 waivers and authorizations to conduct those operations.

Referencing 40125(b), it states (b) "Aircraft Owned by Governments- An aircraft described in subparagraph (A), (B), (C), (D), or (F) of section 40102(a)(41) does not qualify as a public aircraft under

Copyright © 2021 GCPSURT All Rights Reserved

such section when the aircraft is used for commercial purposes or to carry an individual other than a crewmember or a qualified non-crewmember." This means the aircraft operation must be a Governmental function.— The term "governmental function" means an activity undertaken by a government, such as national defense, intelligence missions, firefighting, search and rescue, law enforcement (including transport of prisoners, detainees, and illegal aliens), aeronautical research, or biological or geological resource management.

To operate as a public aircraft operator, the public agency must meet three criteria:

1) The public agency must be an entity of a state government, a political subdivision of a state government, or another government entity described in 49 USC § 40102(a)(41)(C). Such certification must be made in writing by the state attorney general or other state level entity qualified to make the determination and must be accepted by the FAA. Operation of leased aircraft must also meet the requirement of 49 USC § 40102 (a)(41)(D).

2) The aircraft must be either owned by or leased to the public agency who is operating the unmanned aircraft under the approved Certificate of Waiver/Authorization (COA).

3) That the mission being conducted by the public agency meets that of a governmental function. "governmental function means an activity undertaken by a government, such as national defense, intelligence missions, firefighting, search and rescue, law enforcement, aeronautical research, or biological or geological resource management." (Title 49 USC § 40125(a)2) and the mission is not flow for commercial purposes (Compensation or Hire) Per 40125(b)

Operations that do not meet the criteria as a governmental function or operation:

- Education activities of any kind- including teaching UAS Flight skills or as an adjunct to other learning
- Training in preparation for conducting public aircraft operations
- Research done using an unmanned aircraft
- Aeronautical research once the aircraft is functional
- Most public works projects, like overseeing a road or building under construction, plotting and surveying land
- Photography
- Public relations, and tourism
- Demonstration flights including those conducted by police, fire or emergency service agencies
- State-owned utility inspections
- People are not biological resources of a state

If your agency is looking to obtain a COA and there are other departments within your City/County, you will need to reach out to those departments to verify if they have a COA in place. There have been issues in the past that the FAA has decided to only issue City wide COAs to reduce workload. For Example: If the City of Pearland Police Department has a current COA and the City of Pearland Fire Department wishes to have their own COA, the FAA has been hesitant to approve those requests and advised the Fire Department to fly under the PD's COA. This could cause some logistical and workload issues for your agency.

Copyright © 2021 GCPSURT All Rights Reserved

Special Government Interest Process (E-COA)

First responders and other organizations responding to natural disasters or other emergency situations may be eligible for expedited approval through our Special Governmental Interest (SGI) process. Operations that may be considered include:

- Firefighting
- Search and Rescue
- Law Enforcement
- Utility or Other Critical Infrastructure Restoration
- Incident Awareness and Analysis
- Damage Assessments Supporting Disaster Recovery Related Insurance Claims
- Media Coverage Providing Crucial Information to the Public

To apply for a waiver through the SGI process you must be an existing Part 107 Remote Pilot with a current certificate OR you must have an existing Certificate of Waiver or Authorization (COA). If your operation falls under any of the aforementioned emergencies and the flight would require a waiver (flight in controlled airspace, night operations, flight above 400ft AGL, flight in less than 3SM visibility, etc.), then the SGI process may authorize an emergency COA (E-COA). This process has been known to be very expedient with submission to authorization times to range from immediate to ~1 hour.

To submit a waiver through this process for a preplanned event, fill out the Emergency

Operation Request Form (MS Word) and send to the FAA's System Operations Support Center (SOSC) at 9-ator-hq-sosc@faa.gov. If approved, the FAA will add an amendment to your existing COA or Remote Pilot Certificate that authorizes you to fly under certain conditions for the specified operation. If denied, operators should NOT fly outside the provisions of their existing COA or part 107. Operators have the option to amend their requests.

If the event is not a preplanned event, such as a spontaneous emergency event (mass shooting, structure fire, missing person with threat to life or serious bodily injury), contact (202) 267-8276 and provide all requested information. Depending on the urgency of the UAS operation the SOSC representative might immediately authorize the flight, or request the Emergency Operation Request Form be completed and submitted prior to authorization.

See Appendix A for Emergency Operation Request Form

Copyright © 2021 GCPSURT All Rights Reserved

Public Aircraft Operations (Part 91 or Public COA)

COA Online Application Processing System (CAPS)

COA is an authorization issued by the Air Traffic Organization to a public operator for a specific UA activity. After a complete application is submitted, FAA conducts a comprehensive operational and technical review. If necessary, provisions or limitations may be imposed as part of the approval to ensure the UA can operate safely with other airspace users. In most cases, FAA will provide a formal response within 60 days from the time a completed application is submitted. Some agencies have seen a response as little as a few hours for blanket waivers and a few days for jurisdictional authorizations.

The FAA deployed a web-based application system to review and process the applications called CAPS. CAPS provides an interactive online application process to request a COA. The COA you will be applying for through this process is considered called a "Public COA." As such, all operations and certifications will be conducted under Part 91 regulations. It is important to note there are different requirements to operate under Part 91 regulations and your agency needs to review the regulations and determine if it is an option your agency would like to utilize.

Applicants will need to obtain an account in order to CAPS. To gain access and create an account, the CAPS Access Request Form must be completed and submitted to 9-AJV-115-UASOrganization@faa.gov. Once completed and submitted, you will be contacted via the email you provided regarding the account creation process for CAPS. In the section requesting a reason why you are using UAS, use the following verbiage: You represent your agency and will submit COA applications for the your agency, which is developing a sUAS program to address law enforcement and emergency response applications within the AOR.

The CAPS website is https://caps.faa.gov. If you were to go to the webpage prior to gaining authorization to create an account through the link they will provide, you will find a register now button in the top right hand corner of the web page. This process is for Department of Transportation external employees only and does not pertain to FAA public safety COA applications.

An important note, CAPS is a government ran website. As such is as reliable as one might expect. Have patience with CAPS, it will be down often, lock up, and crash. Save your work and be prepared to maybe try another day.

See Appendix B for completed Access Form

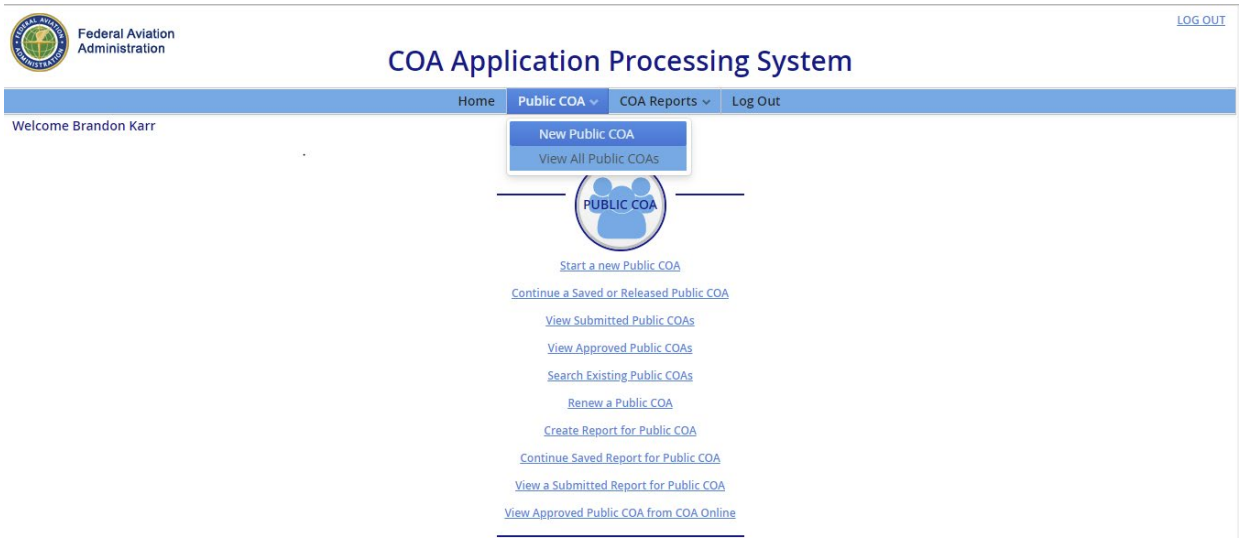
Copyright © 2021 GCPSURT All Rights Reserved

Blanket Class G Airspace COA

A blanket class G airspace waiver permits nationwide flights in Class G airspace at or below

400 feet, self-certification of the UAS pilot, and the option to obtain a Special Government Interest COA (SGI COA) under special circumstances. In the application, you will be requesting a daylight waiver be attached to the COA. Once approved this will grant you the ability to fly sUAS at night in Class G airspace day or night.

To start an application, log into CAPS. Once you have logged in, click on both the Public COA tab and then select New Public COA, or click on Start a new Public COA from the menu.



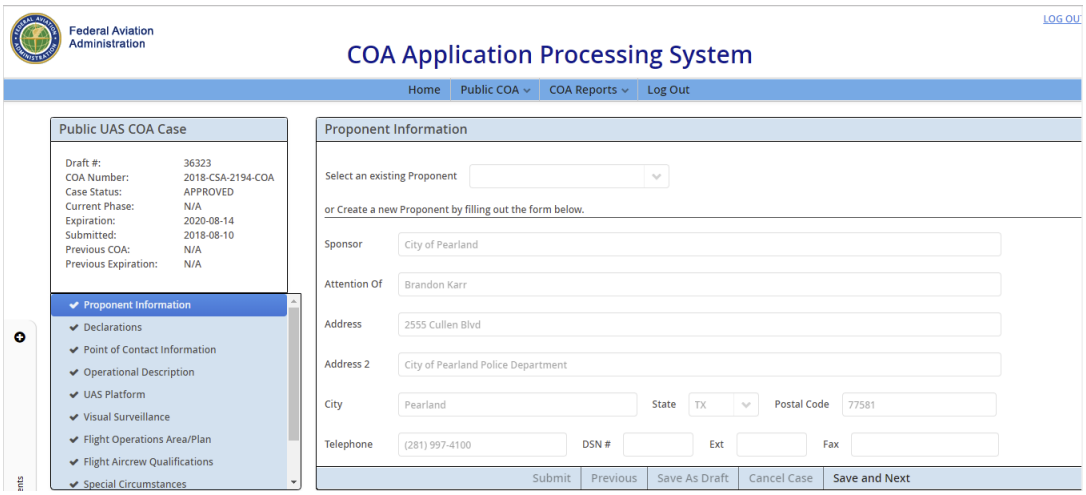
Proponent Information

Once selected, you will be brought to the Proponent Information section of the application. It should be noted, there multiple sections that can be selected on the left hand side of the page. In the main body of the page, you will notice that there is not a scroll option. However, if you were to click in the section then scroll using the down and up arrows on your computer, you will notice that there are more fields that will need to be filled out. This is common on almost every page and should be checked prior moving forward to the next sections.

Proponent Information:

Sponsor:	Blanket Area- Your City/County (City of Pearland)
Attention of:	You or Your UAS Program Manager/Supervisor's name
Address:	Your Department's address information
Telephone:	You or Your UAS Program Manager/Supervisor's work phone number
Email:	You or Your UAS Program Manager/Supervisor's work email

Copyright © 2021 GCPSURT All Rights Reserved



If at any time you need to stop the application process, be sure to click the save as draft button at the bottom of the page to save your progress. Once you have finished the section, click the save and next button.

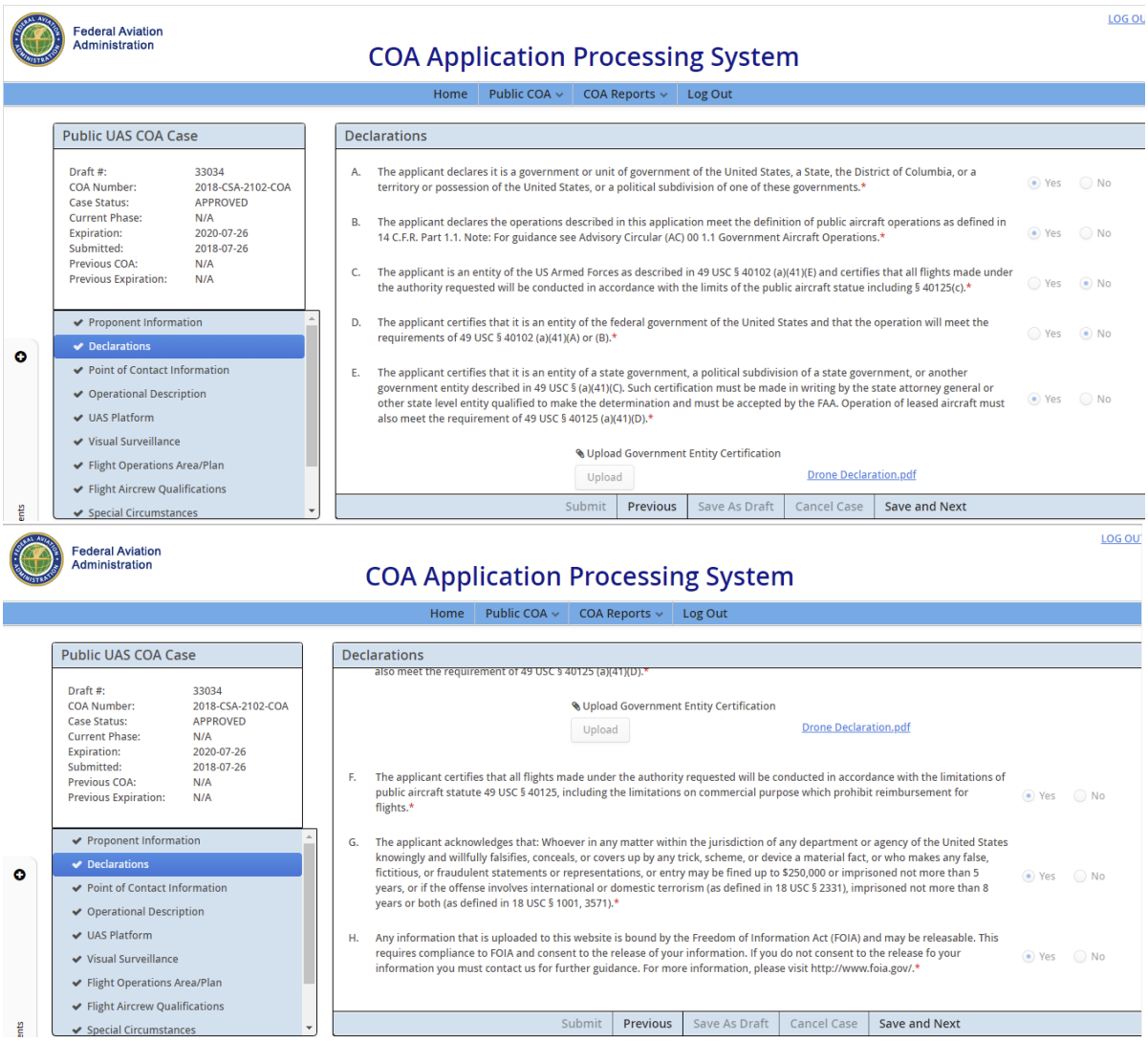
Declarations

This section requires an upload of your City or County Declaration Letter. The Declaration Letter is a letter to the FAA's Air Traffic Manager for UAS from your City or County Attorney advising that your entity is by law a government agency.

Select yes or no as it pertains to your agency. The selections made in this section were made as it pertains to the City of Pearland Police Department. This also is one of those sections with an extended body. Be sure to click on an empty area in the body and scroll using your down and up arrows.

See Appendix C for a copy of the City of Pearland's Declaration Letter for proper verbiage to be used.

Copyright © 2021 GCPSURT All Rights Reserved



Point of Contact Information

Fill out the fields accordingly. This will be the point of contact information in the event the FAA needs to reach out to you or the COA manager regarding any issues.

Operational Description

In the approval effective period section the dates will be filled in by the FAA upon approval. The verbiage for this section are as follows.

Program Executive Summary:

This blanket area COA limits the City of Pearland Police Department to Day and Night UAS operations within the Contiguous United States during daytime Visual Meteorological Conditions (VMC) conditions under the following limitations:

1) In Class G Airspace at or below 400 feet AGL; and

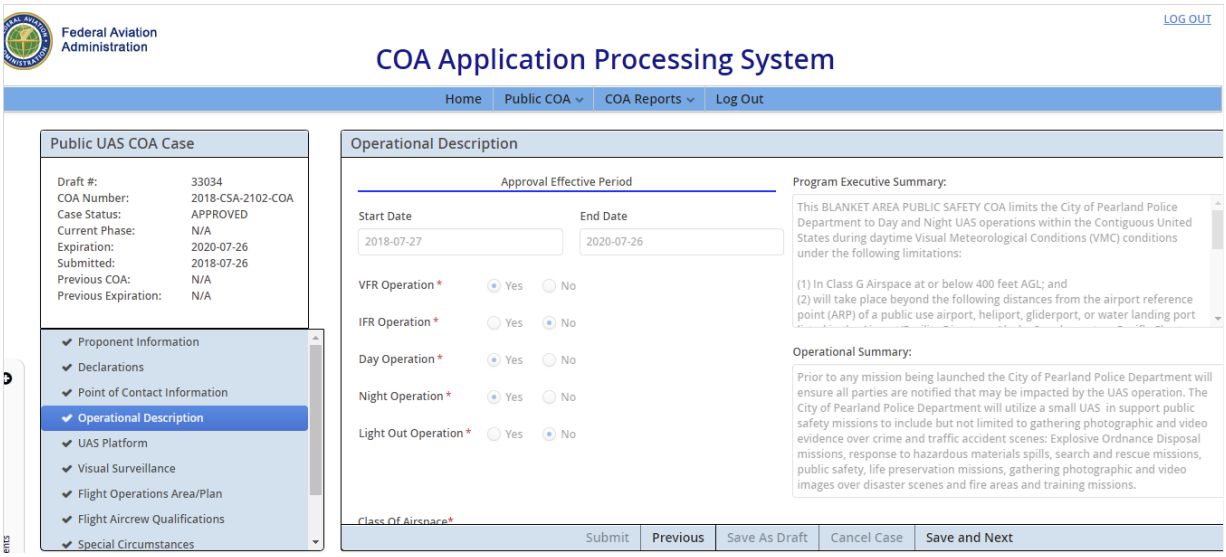
Copyright © 2021 GCPSURT All Rights Reserved

2) will take place beyond the following distances from the airport reference point (ARP) of a public use airport, heliport, glider port, or water landing port listed in the Airport/Facility Directory, Alaska Supplement, or Pacific Chart Supplement of the U.S. Government Flight Information Publications.
    a. 5 nautical miles (NM) from an airport having an operational control tower; or
    b. 3 NM from an airport having a published instrument flight procedure, but not having an operational control tower; or
    c. 2 NM from an airport not having a published instrument flight procedure or an operational control tower; or
    d. 2 NM from a heliport.

For the purposes of the User defined area enter your training location or the location of your agencies main offices.

Operational Summary:

Prior to any mission being launched the City of Pearland will ensure all parties are notified that may be impacted by the UAS operation. The City of Pearland will utilize a small UAS in support public safety missions to include but not limited to gathering photographic and video evidence over crime and traffic accident scenes: Explosive Ordnance Disposal missions, response to hazardous materials spills, search and rescue missions, public safety, life preservation missions, gathering photographic and video images over disaster scenes and fire areas and training missions.



Be sure to click on the class G airspace selection prior to saving and moving to the next section.

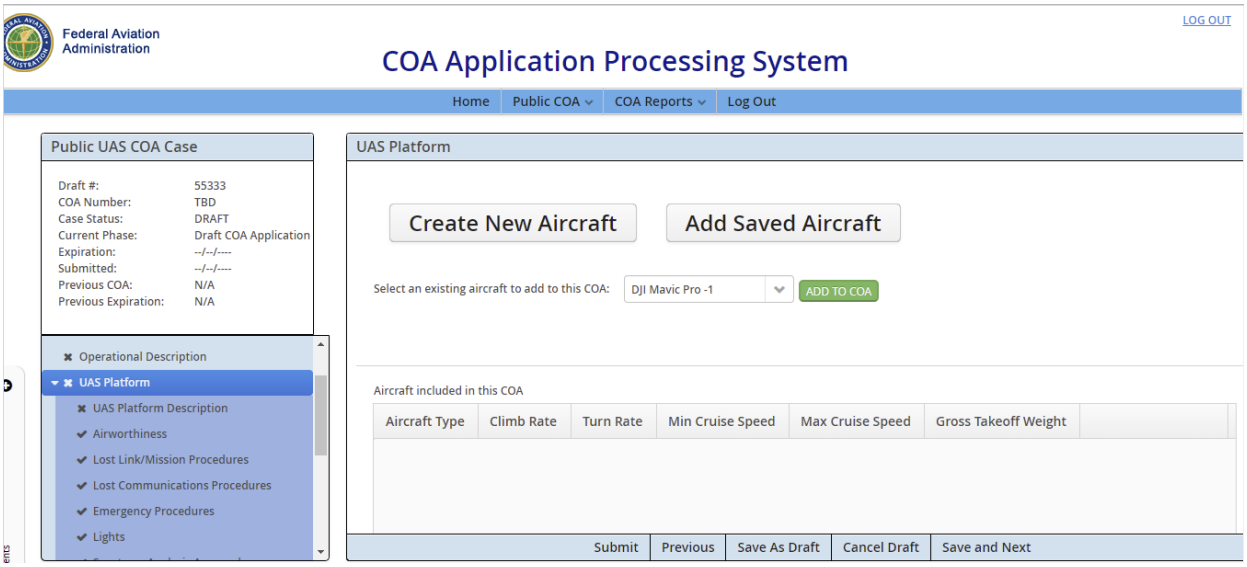
UAS Platform

This section unfortunately is not user friendly, nor does it actually function properly. A COA is required to have UAS Platform information reported in the COA to be approved. However, the coding for the website and back end infrastructure only allows for one sUAS to be submitted. You will create a document that states that all your agency's UAS will be utilized under the COA and are airworthy. For example, Pearland PD currently has 14 sUAS platforms. However only our M210RTKV2 is listed on our

Copyright © 2021 GCPSURT All Rights Reserved

COA. It should also be noted that you might encounter an error where the system does not like the UAS description of the UAS you are entering. Submitting the application with this error will not affect the approval of the application.

Start by clicking “create new aircraft” followed by “create new aircraft with blank forms”. After clicking create new aircraft with blank forms, select UAS Platform Description in the Selection pane on the left hand side of the page.



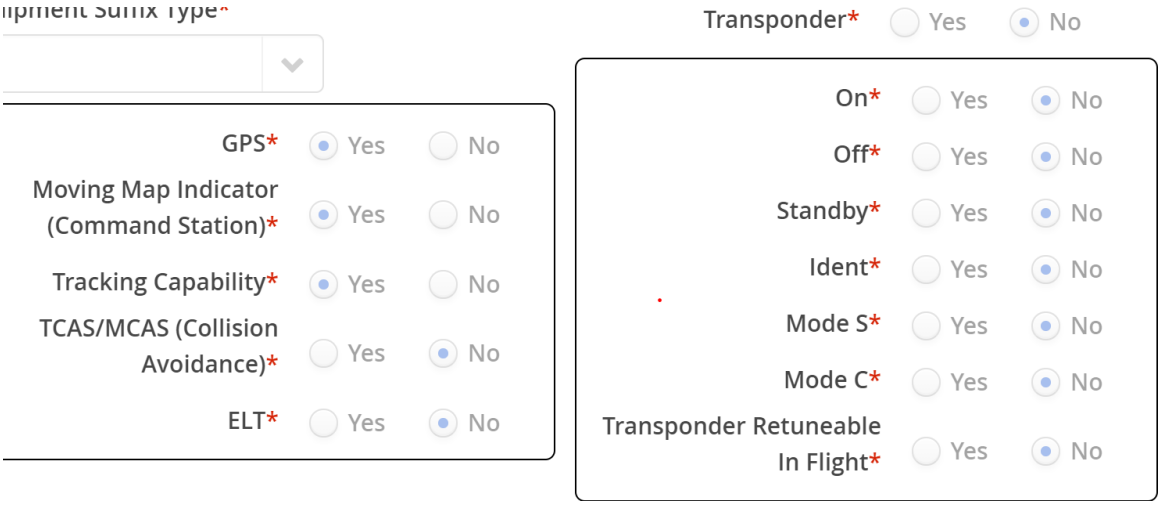
UAS Platform Description

The first box, Aircraft Type/Model is the error that was mentioned earlier in this section. Once anyone in the nation creates a COA Application and submits it to the FAA it records it and no one else can create the same Aircraft Type/Model name except that individual that made the original page. Example the original person submitted a DJI Phantom 4 Pro as DJI P4P. The next person would need to submit the field to be DJI P4P 1 or some other identifier for the same type of aircraft. For the purposes of this field, put the sUAS make and model followed by your agencies abbreviation, this usually solves this error (M210RTK PPD). If not, you might have to get creative. All the information required for these this portion can be found on the manufacturer’s specs websites.

I have provided DJI’s information in Appendix D

The majority of sUAS platform Avionics/Equipment Suffix Types used by public safety, fall under type X. If your agency uses a sUAS that is uncommon, please refer to the manufacturer's specifications. Please see image below for type X selections:

Copyright © 2021 GCPSURT All Rights Reserved



For more information regarding avionics typing, please see the following LINK

Airworthiness

Scroll down to the If no FAA Certificate section. In the text box add a sentence that states your agency finds all sUAS to be airworthy based on the information in the attached document. Scroll further down and upload your airworthiness statement. This statement should be on your department's letterhead. See Appendix E

Lost Link Procedures

Typical lost link procedures for DJI products is, after 3 seconds, the UAS will autonomously return to home. Thus, in the activation time input the number 3. The selections will be specific to your agency's policy and procedures. Recommended selections:

Options- Turn around, directly come back to base

Altitude- Climb

Climb amount (ft)- 400

If Link is re-established- Continue

ATC Contact information should be either your UAS manager/ Supervisor or your Chief Pilot's information. This will be used to directly contact you in the event an ATC needs to contact you.

Finally, create a word document with the following verbiage and upload it to this section.

Title: Lost Link Procedure

1) Lost Link Procedures:
    a. In the event of lost link, the UA must initiate a flight maneuver that ensures landing of the aircraft. Lost Link airborne operations shall be predictable and shall remain within the defined operating area filed in the NOTAM for that flight operation. In the event that the UA could potentially enter controlled airspace, the PIC will immediately contact the appropriate ATC facility having jurisdiction over the controlled airspace to advise

Copyright © 2021 GCPSURT All Rights Reserved

them of the UAS's last known altitude, speed, direction of flight and estimated flight time remaining and the Proponent's action to recover the UA.

b. The sUA is preconfigured / programed in the event of a Lost Link condition to stop forward flight and attempt to regain link to the remote operated by the PIC. If the link is not re-established the UA is programed to initiate a Return to Home maneuver. If link is not re-established the PIC will also initiate a manual Return to Home procedure by activation the Return to home function on the UA's remote.
c. If the link is reestablished the PIC will take control of the UA and continue the operation or maneuver the UA back to the launch location if safe to do so. If link is intermittent the PIC will immediately land the UA in a safe location.
d. Once the UA has returned to home or recovered, the UA will be inspected for causes of the lost link condition and necessary repairs will be made prior to any future flights.
e. All lost link events will be documented along with any findings of causes of these lost link events.

2) Lost Visual Line of Sight:
    a. If the VO loses sight of the UA the VO must notify the PIC immediately. If the UA is visually reacquired promptly, the mission may continue. If not, the PIC will immediately execute lost link procedures
3) Loss Communications:
    a. If communication is lost between the PIC and the VO(s), the PIC must execute the lost link procedures.

Lost Communication Procedures

The selections will be specific to your agency's policy and procedures. Recommended selections:

During a Loss of Communications:

Between Observer and PIC- Type of Your agency's radios

The PIC will use-	Type of your agency's radios to re-establish communications
Between PIC and ATC using-	Type of your agency's radios
The PIC will use-	Cell Phone to re-establish communications

Loss of Visual Sight of the UAV:

PIC will contact-	Observer
The PIC will use-	Type of your agency's radios

Next, create a Lost Communication Procedures word document to be uploaded with the following Verbiage:

Lost Communications Procedures-

1. Loss of Communications between the Pilot in Command and Air Traffic Control If required, the PIC will communicate with ATC through use of two way radio communications or a cellular phone based on the agreement between ATC and the PIC. In the event the PIC is unable to establish communications, the PIC will immediately land the UA until communications can be

Copyright © 2021 GCPSURT All Rights Reserved

regained. In all cases, when during Loss of Communications there is concern for people or property in the air or on the ground the PIC will immediately land the aircraft.

2. Loss of Communications between the Observer and the Pilot in Command The PIC and Observer will be collocated during operations for this COA and communications will be through direct communication. However, if the observer and the PIC are not co-located where verbal communication is not possible, the following communication tools will be utilized….
    a. -Hand held radio
    b. -Voice actuated headsets
    c. -Cellular phone
    d. -Hand Signals (may be used solely or in conjunction with the communication equipment)
3. If communication is lost and cannot be re-established the UA will immediately land

Emergency Procedures

Next, create an Emergency Procedures word document to be uploaded with the following Verbiage:

Emergency Procedures

Personnel flying the UAS will first and foremost be trained that in any emergency situation, the safety of persons on the ground and in the air is number one. The following are emergency procedures and each will be documented with an emergency checklist for crew to review.

- Inflight Fire
    - UAS will be flown away from people and property until a safe landing location can be found. A fire extinguisher and first aid kit will be located at the mission site.
- Loss of Link
    - Onboard system will execute lost link protocol by either landing immediately or returning to launch point and land.
- Line of Sight lost o In the event that both crew members lose sight of the aircraft the pilot will initiate a Return-To-Home on the remote control. The Return-To-Home protocol is identical to the Loss of Link protocol. Once visual contact with the aircraft is reestablished the pilot will take-back the aircraft using the remote control.
- Loss of Engine
    - During an engine failure UAS flight cannot be maintained and the UAS will make an uncontrolled landing. An announcement will be made to all crew members of the loss of the flight of the aircraft and to watch for the landing site.
    - One crew member will bring a fire extinguisher to the landing site in case of fire.
- Unusual Attitude
    - Onboard stabilization gyros will be allowed to level aircraft before control is resumed by ground control.

In the unlikely event of an emergency involving the aircraft and person on the ground, the flight crew (PIC and Observer) shall maintain a list of applicable numbers (EMS, Dispatch, ATC) for emergency contact. The flight crew will also be trained in CPR and first responder medical techniques.

Lights

For this section, refer to the spec sheets for you UAS and select as applied.

Copyright © 2021 GCPSURT All Rights Reserved

Spectrum Analysis Approval

Data Link- Yes

Control Links- Yes

Operations Utilizing RC as described in Title 47- No

There are no files to upload for this section

ATC Communications

Two way Voice Capabilities:

All selections on this page should be No

Electronic Surveillance:

Electro-Optical/Infrared- Yes

Terrain Detection- Yes

Weather/Icing Detection- No

Onboard Radar- No

Electronic Detection System- No

Forward or side looking Camera- Yes

Ground Based Radar Observation- No

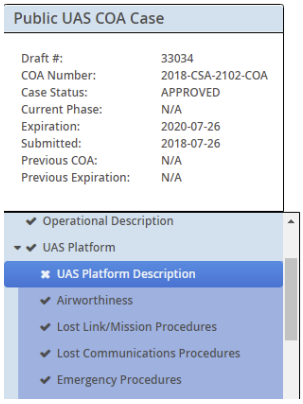
Aircraft Performance Recording

Flight Data Recording- Yes

Control Station Recording- Yes

Voice Recording- No

This concludes the UAS Platform section. You will likely have an X by the Platform Description portion due to the Aircraft Make/Model identifier. As mentioned earlier, ignore this error. As you see in the below picture, the COA will still be approved with this error:



Copyright © 2021 GCPSURT All Rights Reserved

Visual Surveillance

Visual Observers

Maximum Distance from UAS

Vertical- 1000ft AGL (this altitude is for use around structures that grant higher than 400ft AGL)

Horizontal- .5 NM

Airborne Chase Aircraft- No

Ground Based- Yes

VO from one or more ground units- Yes

Flight Operations Area/Plan

In this section you will need to click the white area above the map, but below the Flight

Operations Area/Plan. Then scroll down until you reach the fillable fields. Click on the Add a New box and select Waypoint. In the Location Format box select degrees. Fill in the Lat/Long for your agency's headquarters, which can be located on Google Maps. Next, fill in the speed fields with the information you provided in the UAS platform information.

Floor AGL- 0

Ceiling AGL- 400

Operational ID- Your Agency's Acronym (PPD)

Radius- 1

Then click the save button next to the Location Format box. Scroll down to the Upload section and create the following word documents to be uploaded:

"Blanket Flight Operations Area Plan."

This blanket public safety COA limits Your Agency to Day and Night UAS operations within the Contiguous United States during daytime Visual Meteorological Conditions (VMC) conditions under the following limitations:

1) In Class G Airspace at or below 400 feet AGL; and
2) will take place beyond the following distances from the airport reference point (ARP) of a public use airport, heliport, glider port, or water landing port listed in the Airport/Facility Directory, Alaska Supplement, or Pacific Chart Supplement of the U.S. Government Flight Information Publications.
    a. 5 nautical miles (NM) from an airport having an operational control tower; or
    b. 3 NM from an airport having a published instrument flight procedure, but not having an operational control tower; or
    c. 2 NM from an airport not having a published instrument flight procedure or an operational control tower; or d) 2 NM from a heliport.

Copyright © 2021 GCPSURT All Rights Reserved

For the purposes of the User defined area enter your training location or the location of your agency's main offices.

---END OF FIRST DOCUMENT---

Night Operations Safety Case

Day Operations

UAS operations outside of Class A, B, C, D, and E airspace, active restricted or warning areas designated for aviation use, or approved prohibited areas, will be conducted during daylight hours unless otherwise authorized.

Night Operations.

1) Night operations will be considered if the UAV PIC provides a safety case and sufficient mitigation to avoid collision hazards at night.
2) This will include a plan to stay below 400' AGL and above the highest known obstacle in the flight area. If the PIC cannot confirm hazards in the flight area, night operations will not be authorized.
3) UAS night operations are those operations that occur between the end of evening civil twilight and the beginning of morning civil twilight, as published in the American Air Almanac, converted to local time. (This is equal to approximately 30 minutes after sunset until 30 minutes before sunrise, except in Alaska.) External pilots and observers must be in place 30 minutes prior to night operations to ensure dark adaptation.

Before Night Operations:

a. **The PIC** must conduct three takeoffs (launch) and three landings (recovery) each, in the specific UAS at night, to a full stop in the previous 90 days.
b. **The Observer** requirement. A VO must be positioned to assist the PIC to exercise the see-and-avoid responsibilities required by scanning the area around the aircraft for potentially conflicting traffic and assisting the PIC with navigational awareness.
c. **Visual Observer (VO) must**:
    i. Assist the PIC in not allowing the aircraft to operate beyond the Visual Line of Sight (VLOS) limit.
    ii. Be able to see the aircraft and the surrounding airspace sufficiently to assist the PIC with :

2) Determining the unmanned aircraft's (UA) proximity to all aviation activities and other hazards (e.g., terrain, weather, and structures);
3) Exercising effective control of the UAV;
4) Preventing the UAV form creating a collision hazard.
    i. Inform the PIC before losing sufficient visual contact with the UAV or previously sighted collision hazard. This distance is predicated on the observer's normal vision.

NOTE- Only normal vision using corrective lenses, spectacles, or contact lenses will be allowed.

ADDITIONAL NIGHT OPERATIONS SAFETY information for visibility

Copyright © 2021 GCPSURT All Rights Reserved

WHITE FLASHING NAV LIGHT will be used during all “Night UAV Operations”

Additional Part 107.29 compliant LEDs groups, which consist of 4 cree LEDs housed in one unit, have been affixed to the top hull portion the sUAS. Each of these LED groups exceed the 3SM visibility requirement and have the ability to strobe, flash, or provide continuous light. Each unit weighs approximately 6 grams, thus not interfering with the sUAS flight dynamics.

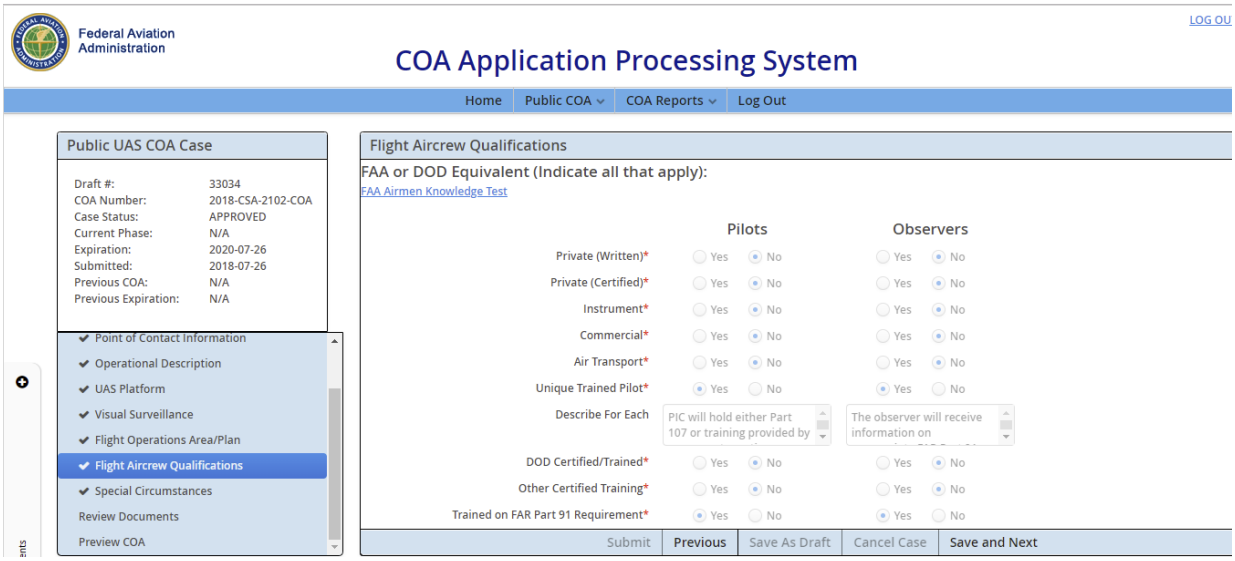
----END OF SECOND DOCUMENT----

You do not have to use the image of the M300 as I have done. You can use any UAS you prefer. The purpose of the image is to depict where the anti-collision light will be mounted.

Copyright © 2021 GCPSURT All Rights Reserved

Flight Crew Qualifications

See Image for selections:

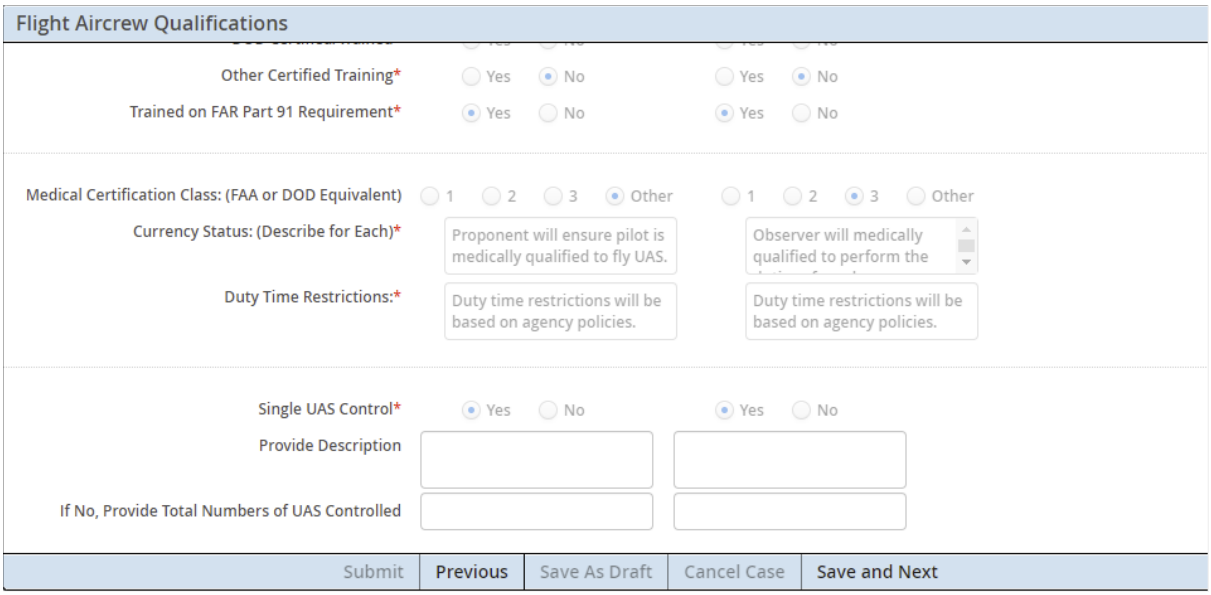


Verbiage for Pilot Box:

PIC will hold either Part 107 or training provided by proponent meeting appropriate FAR (Federal Air Regulations)

Verbiage for Observer Box:

The observer will receive information on appropriate FAR Part 91



Copyright © 2021 GCPSURT All Rights Reserved

Pilot Currency Status Verbiage:

Proponent will ensure pilot is medically qualified to fly UAS.

Observer Currency Status Verbiage:

Observer will medically qualified to perform the duties of an observer.

Pilot and Observer Duty Time Restrictions Verbiage:

Duty time restrictions will be based on agency policies.

Special Circumstances

In the text box state “See Flight Operations Area Plan for Night Safety Case.”

Review Documents

This section depicts all the documents that have been registered as uploaded correctly. There have been instances where files are missing in this section, but showing to be uploaded in the appropriate section they were uploaded in. If this is the case for your instance ignore that they are not showing up in the Review Documents portion and continue. If the file is not showing up in either this section or the section it is supposed to have been uploaded in, reattempt to upload the file.

Files that should be in this section (not in any specific order):

Declaration Letter

Emergency Procedures

Lost Communications

Lost Link Procedures

Airworthiness Statement

Blanket Flight Operations Plan

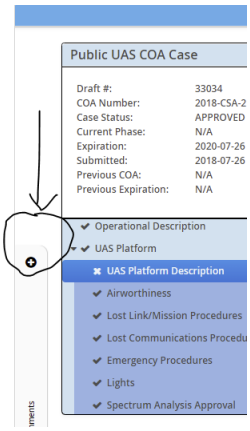
Night Operations Safety Case

Preview COA

This section is a review of all the previous sections. If all are correct, click the submit button.

This will send the application to the FAA application reviewers. You will receive an email regarding the status of the application after the review is complete. If approved, you will receive a pdf file of the COA see Appendix E. If denied, typically it is due to some minor adjustment the reviewer from your region prefers and is easily adjusted. After the adjustments are made, resubmit the application. The comments from the reviewer can be found on the far left side of the page:

Copyright © 2021 GCPSURT All Rights Reserved



Jurisdictional COA

A jurisdictional COA should be obtained if your operations will or could be conducted in controlled airspace. A jurisdictional COA will allow for Day and Night small UAS (55 pounds or less) operations during Visual Meteorological Conditions (VMC) conditions under the following limitations: In Class B, C, D, and E Airspace at the highest available altitudes in accordance with the UAS Facilities Map. To see the facilities map, please see this LINK. The process is exactly the same as a blanket Class G COA with a few exceptions. Those exceptions will only be outlined in this section. For all other sections, refer to the blanket COA fields.

Operational Description

Program Executive Summary:

This JURISDICTIONAL PUBLIC SAFETY COA approval will allow for Day and Night small UAS (55 pounds or less) operations during Visual Meteorological Conditions (VMC) conditions under the following limitations: In Class B, C, D, and E Airspace at the highest available altitudes in accordance with the UAS Facilities Map

Operational Summary:

Prior to any mission being launched the City of Pearland Police Department will ensure all parties are notified that may be impacted by the UAS operation. The City of Pearland Police Department will utilize a small UAS in support public safety missions to include but not limited to gathering photographic and video evidence over crime and traffic accident scenes: Explosive Ordnance Disposal missions, response to hazardous materials spills, search and rescue missions, public safety, life preservation missions, gathering photographic and video images over disaster scenes and fire areas and training missions.

Class of Airspace:

Check all that apply to your area

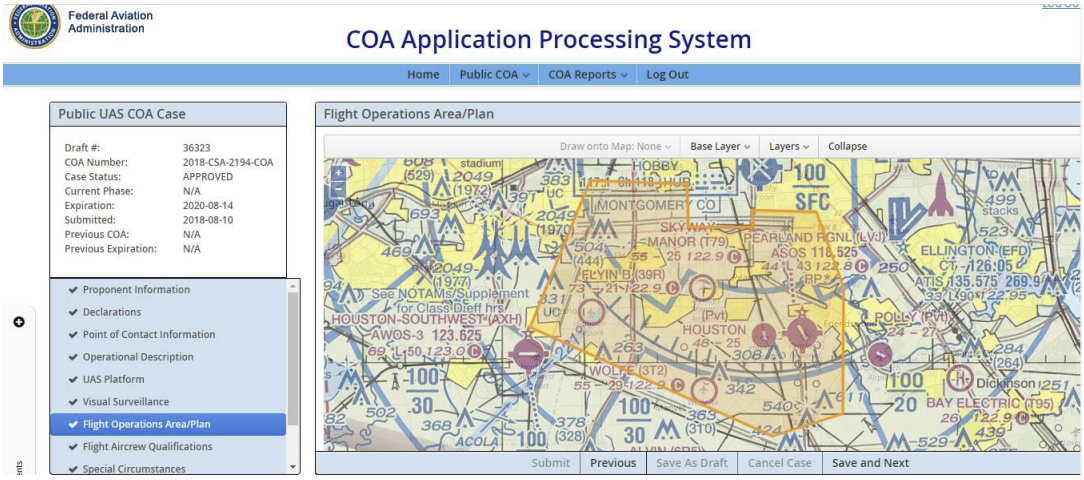
UAS Platform

In this section you can skip the creating a new form and pull the information from your saved UAS from your Blanket COA. If you did not create the blanket COA follow the blanket COA steps.

Copyright © 2021 GCPSURT All Rights Reserved

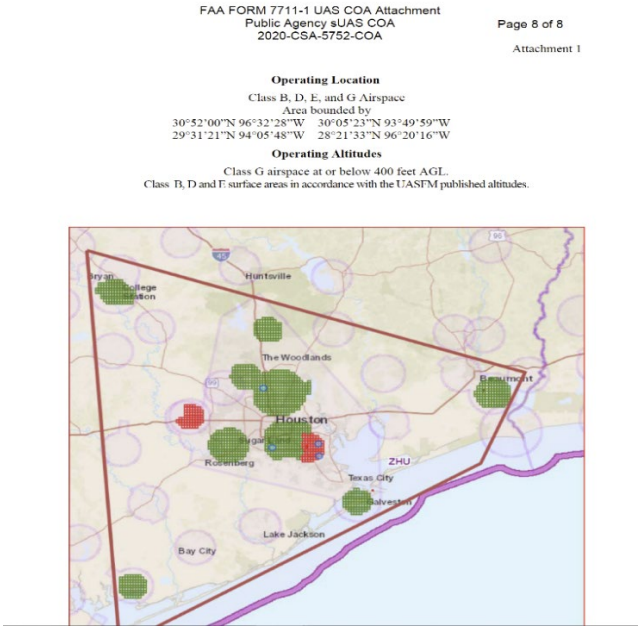
Flight Operations Area/Plan

At the top of the map select the draw on the map drop down box and select “area.” Use this feature to draw your area of operations (County, City, etc.). It might be easier for you to select base layer and select roads. Then, select layers and deselect VFR. This will provide a google map overlay of the area. Be careful not to overlap your waypoints.



It should be noted that the City of Pearland resides in three counties. I attempted to request all three counties in their entirety by drawing the outlines of all three counties combined. I was advised by the FAA that this was unacceptable and was restricted to my city boarders and immediate surrounding areas. Regardless of my role in the regional team, legal jurisdiction in all three counties, or legal jurisdiction anywhere in the state as a police officer. Due to this, it is recommended you request your immediate area and nearby surrounding areas for this process.

However, if your agency is part of a regional team and your declaration letter states that you can and do respond outside of your jurisdiction to respond to mutual aid request for all hazard incidents, you can obtain wider jurisdictional areas. See below image for our approved wide area jurisdictional area:



FAA FORM 7711-1 UAS COA Attachment
Public Agency sUAS COA
2020-CSA-5752-COA

Page 8 of 8

Attachment 1

Operating Location

Class B, D, E, and G Airspace
Area bounded by
30°52'00"N 96°32'28"W 30°05'23"N 93°49'59"W
29°31'21"N 94°05'48"W 28°21'33"N 96°20'16"W

Operating Altitudes

Class G airspace at or below 400 feet AGL.
Class B, D and E surface areas in accordance with the UASFM published altitudes.

Copyright © 2021 GCPSURT All Rights Reserved

Once your area is selected as depicted above, a pop up box will appear. Fill out the fields as you did for the blanket Class G COA, then save the area.

Create the following documents to be uploaded:

Jurisdictional Night Safety Case Day Operations.

UAS operations outside of Class A, B, C, D, and E airspace, active restricted or warning areas designated for aviation use, or approved prohibited areas, will be conducted during daylight hours unless otherwise authorized.

Night Operations.

Night operations will be considered if the UAV PIC provides a safety case and sufficient mitigation to avoid collision hazards at night.

This will include a plan to stay below the highest available altitudes in accordance with the UASFM; or 400' AGL and above the highest known obstacle in all other airspaces within the flight area. If the PIC cannot confirm hazards in the flight area, night operations will not be authorized.

1. UAS night operations are those operations that occur between the end of evening civil twilight and the beginning of morning civil twilight, as published in the American Air Almanac, converted to local time. (This is equal to approximately 30 minutes after sunset until 30 minutes before sunrise, except in Alaska.) External pilots and observers must be in place 30 minutes prior to night operations to ensure dark adaptation.

Before Night Operations:

1. The PIC must conduct three takeoffs (launch) and three landings (recovery) each, in the specific UAS at night, to a full stop in the previous 90 days.

2. The Observer requirement. A VO must be positioned to assist the PIC to exercise the see-and-avoid responsibilities required by scanning the area around the aircraft for potentially conflicting traffic and assisting the PIC with navigational awareness.

3. Visual Observer (VO) must:

a. Assist the PIC in not allowing the aircraft to operate beyond the Visual Line of Sight (VLOS) limit.

b. Be able to see the aircraft and the surrounding airspace sufficiently to assist the PIC with :

- Determining the unmanned aircraft's (UA) proximity to all aviation activities and other hazards (e.g., terrain, weather, and structures);
- Exercising effective control of the UAV;
- Preventing the UAV form creating a collision hazard.

c. Inform the PIC before losing sufficient visual contact with the UAV or previously sighted collision hazard. This distance is predicated on the observer's normal vision.

Copyright © 2021 GCPSURT All Rights Reserved

d. Have completed Night VO Operation Training in the previous 24 months. . Training includes night vision factors and illusion identification and prevention.

NOTE- Only normal vision using corrective lenses, spectacles, or contact lenses will be allowed.

ADDITIONAL NIGHT OPERATIONS SAFETY information for visibility

WHITE FLASHING NAV LIGHT will be used during all “Night UAV Operations”

Additional Part 107.29 compliant LEDs groups, which consist of 4 cree LEDs housed in one unit, have been affixed to the top hull portion the sUAS. Each of these LED groups exceed the 3SM visibility requirement and have the ability to strobe, flash, or provide continuous light. Each unit weighs approximately 6 grams, thus not interfering with the sUAS flight dynamics.

---END OF FIRST DOCUMENT----

This JURISDICTIONAL PUBLIC SAFETY COA limits Your Agency to Day and Night UAS operations within the Contiguous United States during daytime Visual Meteorological Conditions (VMC) conditions under the following limitations:

(1) In Controlled Airspace:

a. At the highest available altitudes in accordance with the UASFM; or (2) In All Other Airspace:

a. At or below 400ft AGL; and

b. will take place beyond the following distances from the airport reference point (ARP) of a public use airport, heliport, glider port, or water landing port listed in the

Airport/Facility Directory, Alaska Supplement, or Pacific Chart Supplement of the U.S.

Government Flight Information Publications.

i. 5 nautical miles (NM) from an airport having an operational control tower; or

ii. 3 NM from an airport having a published instrument flight procedure, but not

having an operational control tower; or

Copyright © 2021 GCPSURT All Rights Reserved

iii. 2 NM from an airport not having a published instrument flight procedure or an operational control tower; or

iv. 2 NM from a heliport.

---END OF SECOND DOCUMENT---

Once you have made these adjustments, review your COA and submit.

Copyright © 2021 GCPSURT All Rights Reserved

COA Reporting

Every month ALL approved COAS require you to log the flights conducted under the COA's Authorization (flights in controlled airspace and night ops), even if there were no flights conducted under the COA. The reporting menu can be found here:

Copyright © 2021 GCPSURT All Rights Reserved

Tactical Beyond Visual Line of Sight Waiver Process (TBVLOS)

Introduction

As agencies with developed programs continue to utilize UAS for public safety, we have learned there is a need for the ability to operate a sUAS beyond visual line of sight to preserve the safety of personnel on the ground. This waiver in crucial to the safety of everyone involved with the incident where time is critical. Due to the urgency of the threat, contacting the SOSC to obtain the ECOA for BVLOS is not viable and the time spent could directly affect the lives of all personnel involved. There are a multitude of instances that would require BVLOS to preserve the safety of personnel on the ground as well as the operator of the sUAS virtually every public safety department including, but not limited to high risk tactical instances, HAZMAT/Fire suppression, and major disaster instances. It is important to understand that prior to the utilization of the BVLOS waiver, all deployments will be flown under your personal or agency's waivers and authorizations. All deployments will be flown within VLOS until it is no longer safe to do so, at which point this waiver will be utilized.

As with the previous guide, Certificates of Authorization for Public Safety, I have created this guide to assist your agency in acquiring the Part 91.113 BVLOS waiver. This guide was developed based on my experience obtaining our own BVLOS waiver with the Pearland Police Department. With that being said, this waiver guide is tailored for law enforcement agencies. However, I am certain that other departments can tailor it for their needs as well. The Part 91.113 BVLOS waiver process is completed in four stages. Those stages are preplanning, presentation, review and response, and approval.

Preplanning

The first step is to develop a concept of operations (ConOp). The ConOp is your explanation to the FAA's risk assessment team that your deployments under the waiver will be conducted safely for all parties involved. As previously mentioned, the ConOp should discuss the following:

- Assumptions, Risks, Hazards, and Mitigation plan
- Airspace Description
- How your BVLOS deployments will be conducted.

City of Pearland COA Waiver Request/Safety Case

The following is the narrative we used for our BVLOS waiver:

The City of Pearland operates a very robust Public Safety UAS program to include 12 aircraft, multiple high zoom cameras, thermal, payload dropping systems, remote spot lighting, a specialized UAS operations and command vehicle and a crew of 6 Pilots. The team trains a minimum of twice a month (day and night sessions) and has deployed on several missions throughout Texas to include missing persons, SWAT, active shooters, bomb/explosive devices, hazmat incidents, large protest events, and many other situations/incidents. Additionally, the team has responded to requests for assistance and/or has conducted training or coordination with the FBI, US Coast Guard and other state and federal entities. The team operates under a Blanket and a Jurisdictional COA. Members of our team are very engaged in Public Safety UAS advancement and integration at the local, state, and national level. Members participate on committees and/or workgroups with entities such as NIST, TXDOT, TDEM, and Drone Responders. The Pearland Police Department also participates in the largest public safety regional team in the State of Texas, the Gulf Coast Regional Public Safety Unmanned Response Team. The purpose of this safety case is to request a Waiver to the requirements of 14 CFR 91.113(b) to allow for Low Altitude/Close Proximity BVLOS operations. The following safety case will show the need for this

Copyright © 2021 GCPSURT All Rights Reserved

ability, and how we will conduct such operations safely and with the utmost concern for manned aircraft, other unmanned aircraft, and persons on the ground at all times.

Concept Overview:

Our UAS Team has been on several missions where there was a need to get the UAS in a certain position (50'-100' AGL) to provide video observation and situational awareness to command staff and tactical teams, however, to do this, the UAS would need to be moved out of the line of sight of the PIC and VO. Because of the dangerous conditions (active shooter, barricaded subject, bomb/IED, hazmat condition, etc.) the PIC or VO could not be placed into a position to see the UAS at this altitude/position. This is because if the PIC or VO could see the UAS, they could be shot by the bad guy, or be in close proximity of the bomb/IED, or hazmat which could be a potentially deadly location for these persons. Therefore, the tactical advantage of being able to gather very important information from the UAS could not be made. Additionally, we have been on several incidents where we did not have cellular communications due to being in a remote location, in an area that cellular service was disrupted due to a weather event, or due to a mass gathering event where the cellular capacity was overwhelmed and a call could not be made. Therefore, an SGI could not be made to request this ability in an emergent situation.

Description of the Airspace:

While our UAS Team can be called upon to respond throughout the State of Texas, for missions requiring the need to fly under this proposed waiver, the primary area will be within class G airspace or within the boundaries of our Jurisdictional COA. We have a great relationship with all of the staff at these ATCTs for KHOU and KEFD under our Jurisdictional COA regularly. The operational airspace requested in this safety case is low altitude/close proximity (at or below 150' AGL and within 1,000') of the Pilot in Command of the aircraft.

Description of the System:

The proposed system to be used for operations as described above include the following:

1) DJI aircraft to include the Matrice 210, Mavic 2 Enterprise Series, Parrot Anafi Thermal, and Mavic Mini platforms.
2) Thermal and high powered zoom EO cameras with spotlights.
3) FlightRadar24. This is a subscription based computer program that tracks manned aircraft. The area of operation can be zoomed in on and monitored for aircraft operating in the area. Aircraft information to include destination can be quickly obtained.
4) DroneSense Flight Awareness System- DroneSense allows the pilot and stakeholders to see live feeds of the UAS camera(s), telemetry, battery life, GPS connectivity, RF connectivity, and all of the aforementioned capabilities for other sUAS utilized for the deployment.
5) Portable aircraft band radios with pre-programmed channels for airports and other frequencies for communications with ATCT's and aircraft.
6) Heavy duty payload carrying and dropping mechanisms for delivering communications devices to hostage takers/barricaded subjects/etc., ammunition to officers, and first aid supplies to officers, medics, or citizens, and/or delivering other critical needs.

Assumptions, Hazards, Risks, and Mitigation Plans:

The flight over people are always a concern. However, in this case the people are either SWAT or other law enforcement persons, the hostages or pinned down persons, or the bad guys. It is assumed that all persons located in the operations areas are participants in the operation and therefore, meet the intent of provisions in our COA for flying over them during this incident. Other hazards and/or risks include:

Copyright © 2021 GCPSURT All Rights Reserved

1) Aircraft not involved in the incident (manned or unmanned) not within LOS of the PIC or VO
2) Inability to see our aircraft
3) Our aircraft can be shot down or otherwise brought down/disabled by bad guy

It is also the assumption of the UAS Team, based on real world incidents and training that the risks associated with our proposed low altitude/close proximity BVLOS operation is almost nonexistent and definitely outweighs the risk. The information gathered by this operation will provide the incident commander, other key decision makers, and tactical leaders with realtime/ instant situational awareness that could save many lives. The teams' mitigation plans are outlined in the Concept of Operations section below.

Concept of Operations (operational, communications, safety procedures):

The City of Pearland UAS team firmly believes the need for Low Altitude/Close Proximity BVLOS operations can be conducted in a safe manner that meets the expectations of the FAA. We have invested extensive time, effort, training and funding in order to put together a very safe operational plan to carry out this need. Based on our experience, capabilities and needs, we provide the following procedures for the operations, communications, safety and mitigation of a Low Altitude/Close Proximity BVLOS operation:

1) All operations will be conducted under our Blanket COA (your coa number here), our Jurisdictional (your coa number here), and any provided waivers and addendums.
2) Team personnel shall ensure the airworthiness of each aircraft prior to flights commencing
3) Distance from PIC to aircraft will not exceed 1,000'
4) Altitude will not exceed 150' AGL
5) Ceiling on aircraft/remote will be set prior to flight operations for an altitude that is no higher than the maximum approved ceiling for the airspace as approved in applicable COA's, LAANC, or SGI approval.
6) Alternate/Emergency landing areas will be identified prior to takeoff. Additionally, crews will follow established procedures per our approved COA's for loss of GPS, lost link, flyaway, GCS emergency/failure, etc.
7) Return-to-Home provisions to include safe altitude, flight path, landing zone, etc. will be established prior to flight and coordinated with other aircraft and any elevated apparatus (i.e. Fire Department Aerial Ladders, video/weather masts on command vehicles, etc.)
8) A VO will be used for all flights to monitor the aircraft until it drops BVLOS
9) When aircraft is BVLOS, a dedicated VO will continue to monitor the airspace above the area of the BVLOS operation for other aircraft (manned and unmanned) to "see and avoid" or any other issues of conflict throughout operation and shall resume VO responsibilities of the aircraft when it comes back into LOS
10) When the aircraft is BVLOS as described above, it may be possible to utilize SWAT or other Law Enforcement personnel, Bomb Squad, Hazmat Technician, or other person(s) in the dangerous area to provide limited VO or situational awareness of the UAS when it enters the area that they are operating in (the area that is BVLOS of the primary VO). If available and used, their communications with the PIC/VO will be via radio/cell phone. It is realized that this is not their primary responsibility, however, to the extent possible the UAS team will utilize this VO resource when available.
11) As needed, a secondary UAS with a secondary PIC and VO shall be used as an elevated over watch of the airspace above the aircraft that is BVLOS to look for any approaching aircraft (manned or unmanned) to "see and avoid" during this BVLOS operation. This secondary aircraft operation shall be coordinated directly with the BVLOS aircraft PIC and VO for maintaining a safe

Copyright © 2021 GCPSURT All Rights Reserved

area of operation that is clear of other aircraft (this may not always be needed as sometimes the max AGL is only ~50' or less). Additionally, the VO shall still maintain look out to "see and avoid" all other operational airspace. The secondary aircraft will only be used to maintain situational awareness of the very small area that the VO cannot see.

12) When operating a secondary aircraft for observing the airspace, a coordination/deconfliction plan shall be in place for altitude separation, Lost Link, Return-to-Home paths, and any other safe aircraft operational needs.
13) PIC will ensure that a crew member monitors FlightRadar 24, DroneSense, and/or other subscribed program to alert crew of aircraft approaching operational area
14) Applicable ATCT's will be notified and coordinated with as applicable
15) Crews will monitor our portable aircraft radio and the applicable channel/frequency for the area in the event direct communications are needed with manned aircraft and/or the ATCT.
16) When applicable, the ADS-B function shall be in use and monitored on our DJI products to monitor for manned aircraft in the area.
17) Anti-collision lighting visible from 3 miles will be utilized on aircraft at all times during these operations (night and day)
18) As needed, an Air Boss will be established for operations involving other aircraft such as MedEvac, military (USCG, etc.), news media aircraft, etc. and a communications plan will be established that all agree on and can conform to
19) In the event of a miscommunication, lack of communication, or other issue that results in a manned aircraft entering into the direct area of UAS operations, the UAS(s) will immediately yield the right of way and safely clear the area/land as appropriate for the situation presented
20) UAS Team will train on these BVLOS operations at least quarterly. This training will simulate BVLOS operations, but will utilize actual VO's at all times
21) Training records for these BVLOS training sessions will be maintained and readily available for inspection upon request

NOTE: We considered a requirement to establish a TFR for the area of BVLOS operations, however, we feel that our very low altitude (below 150' AGL), the ability to visualize the airspace above our operations area, aircraft radio communications ability, and prior communications with the ATCT in the area will provide the safety needs of all flights (manned and unmanned) in the operations area.

Contingency Procedures (lost communication, lost link, flyaway, aircraft/GCS emergencies):

Procedures for the unlikely loss of communications, lost link, flyaway, aircraft/GCS emergency are included in the procedures above.

Accident and Incident Reporting:

Any reportable incident, accident or mishap shall be reported as per the requirements of our COA's. Additionally, all calls for service of our UAS team are recorded to the NASA Aviation Safety Reporting System: https://akama.arc.nasa.gov/asrs_ers/general.html and are available to the FAA for review as allowed by law.

After-Actions Report:

The UAS Team Leader for each call completes a UAS Deployment AAR at the completion of each deployment. All incidents are also briefed with the entire team at the following training session which occurs every two weeks.

Copyright © 2021 GCPSURT All Rights Reserved

Conclusion

The City of Pearland has invested over $200,000 in our UAS equipment and hundreds of hours of training and flight time. We are regarded nationally as a highly trained, equipped and experienced team. We take Public Safety UAS very seriously and strive to be on the cutting edge of its utilization for the good of our personnel and the citizens we serve. We feel that there is a tremendous need for BVLOS in the Public Safety UAS world and realize that there are still some issues with providing approval for them. However, our request is not for long distance and/or high altitude BVLOS and should not be grouped into the same category or level as those wanting BVLOS for long distance utility inspections, package delivery, or other such operations. We are asking for Low Altitude/Close Proximity BVLOS with a maximum of 150' AGL and a maximum distance from the PIC of 1,000'. The area of operation in which the aircraft will be BVLOS is mostly in an area that manned aircraft cannot fly (i.e. below tree line, between buildings, etc.), and the airspace above these areas can be seen by the VO(s) or with the use of a secondary aircraft.

On behalf of the City of Pearland and the other jurisdictions/entities (local, state, and federal) that we provide Public Safety UAS operations for, we appreciate your consideration of this request. Should you have any questions, need clarification, or otherwise would like to discuss this request please contact me at any time. My contact information is listed below.

Brandon Karr
sUAS Program Coordinator
Physical Address:
2555 Cullen Parkway
Pearland, TX 77581
(281) 997-4100 – office
(281) 825-2060 - cell
uas@pearlandtx.gov
www.pearlandtx.gov/police

Once your ConOp is complete, save the document in either a word doc format or adobe pdf. The document will be emailed to the FAA to start the application process.

Copyright © 2021 GCPSURT All Rights Reserved

Application Request

The second step of the preplanning stage is to request a BVLOS waiver is to access your agency's CAPS account through Https://caps.faa.gov. At the bottom of the dashboard page you will notice a black box that states "Attention: If you are requesting a waiver to 91.113 for Beyond Visual Line of Site operations using other than visual observers or a chase plane, do not submit an application unless you have been instructed to do so by AJV-115. For more information on a 91.113 waiver, please submit an email to 9-UAS-91.113Waivers@faa.gov."

In my initial email I submitted the ConOp document and advised I wished to request a BVLOS waiver and have attached the ConOp document to the email. Three days later I received an email confirming the email was received by the FAA and that a teleconference would be scheduled. The scheduled meeting took place a month later. All of the correspondence and scheduling took place via email.

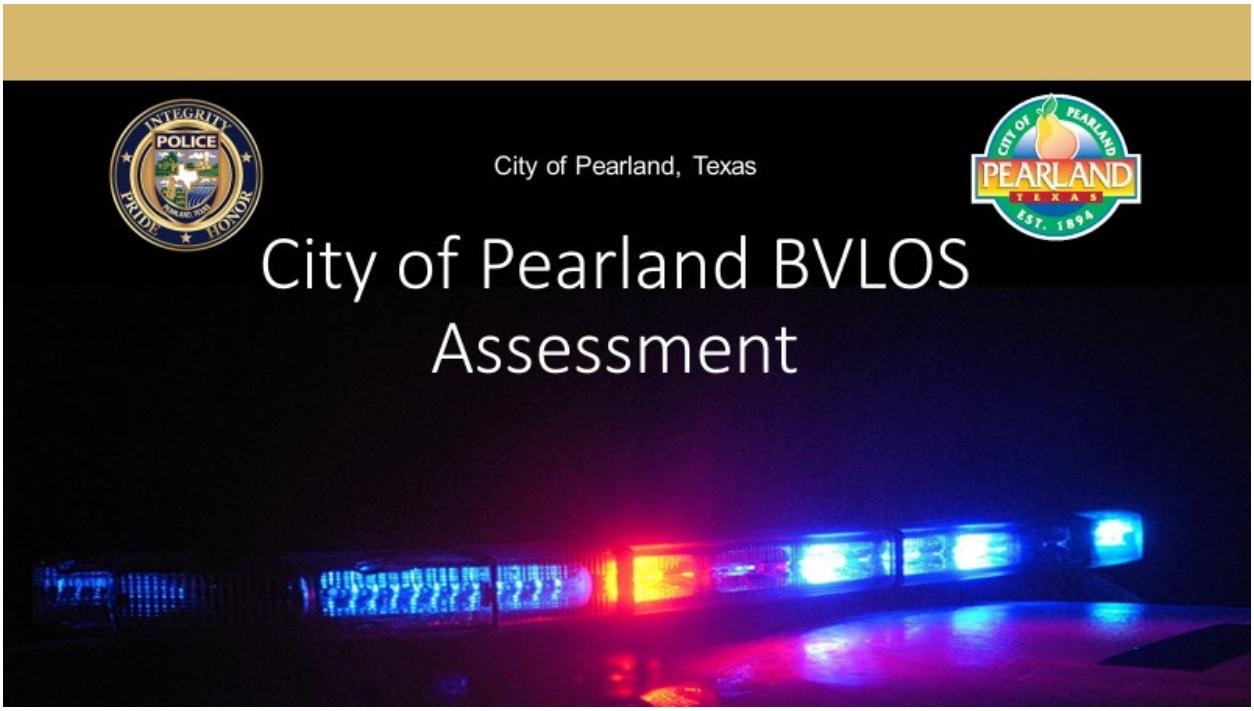
Presentation Phase

This phase is your opportunity to show the FAA that you have researched BVLOS, to explain how you know and believe it can be conducted safely, and to explain what products you have to assist you with risk mitigation. This presentation took place in the form of a teleconference with approximately 23 participants from the FAA. They will ask questions regarding your ConOp for clarification and be provided the opportunity for you to explain your individual needs and capabilities.

I have attached the powerpoint we used below. Bear in mind, I did have videos attached to the powerpoint and ArcGIS mapping for the BVLOS assessment presentation. The slides that only have photos of product were described verbally by myself to explain the purpose, features, and limitations of the products we use. While it is important to show you did your due diligence to emphasize you know your area of operations and you know the capabilities of your systems; how you will be safely conducting BVLOS deployments is the primary focus of this process. One of the challenges I had during the meeting is some of the participants in the meeting only had access to the ppt via pdf and could not

Copyright © 2021 GCPSURT All Rights Reserved

see the videos nor the mapping. I strongly encourage you to have a contingency plan for this and other technical difficulties.



Introduction

- Brandon Karr
  - Former CFI- Cert Number: xxxxxxx
    - Single engine, Muti-engine, and Instrument
  - Part 107 Certified- Cert Number: xxxxxxx
  - sUAS Instructor and Curriculum Developer
    - Texas A&M Engineering Extension Service
    - Forensic Mapping Solutions
  - President of the Gulf Coast Regional Public Safety Unmanned Response Team

City of Pearland, Texas

Copyright © 2021 GCPSURT All Rights Reserved

Introduction

- Established 2017
- Currently Have 4 Part 107 Certified Pilots and 12 aircraft
- Have FAA Authorization to fly day or night
  - Jurisdictional: xxxx
  - Blanket Class G: xxxx
- Flown over 300 missions for public safety
- Participated in 2 large scale SAR events and multiple local mutual aid requests.
- All Patrol Officers have been trained and certified to be visual observers to the night operations standard.

City of Pearland, Texas

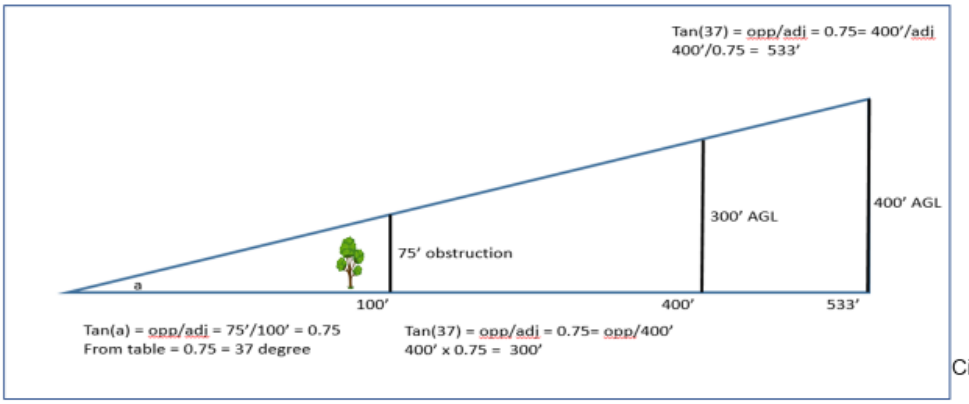
Topics of Discussion

- City of Pearland- Equipment
- City of Pearland- Environment
- Examples of the benefit of BVLOS use on prior missions
- Assumptions, hazards, risks, and mitigation plan
- Concept of Operations

City of Pearland, Texas

Copyright © 2021 GCPSURT All Rights Reserved

- Best altitude is <150’ AGL in most cases (windows, objects, persons, etc.)
- Many times an altitude of 10’-20’ or even landing the aircraft is best
- With Pilot located 100’ from 75’ tree line, VLOS only allows a distance of 200’ from the pilot or 100’ on other side of tree line at 150’ AGL



City of Pearland, Texas

City of Pearland sUAS Equipment

DroneSense

flightradar24
LIVE AIR TRAFFIC

City of Pearland, Texas

Copyright © 2021 GCPSURT All Rights Reserved

Mavic 2 Enterprise

- 20-30 minute flight time
- Omnidirectional collision avoidance sensors
- High quality video 4k
- Zoom and thermal capabilities
- Operating Frequencies
  - 2.400 - 2.4835 GHz
  - 5.725 - 5.850 GHz
- ADS-B In capabilities
- FCC ID: SS3-L1ZE1807

City of Pearland, Texas

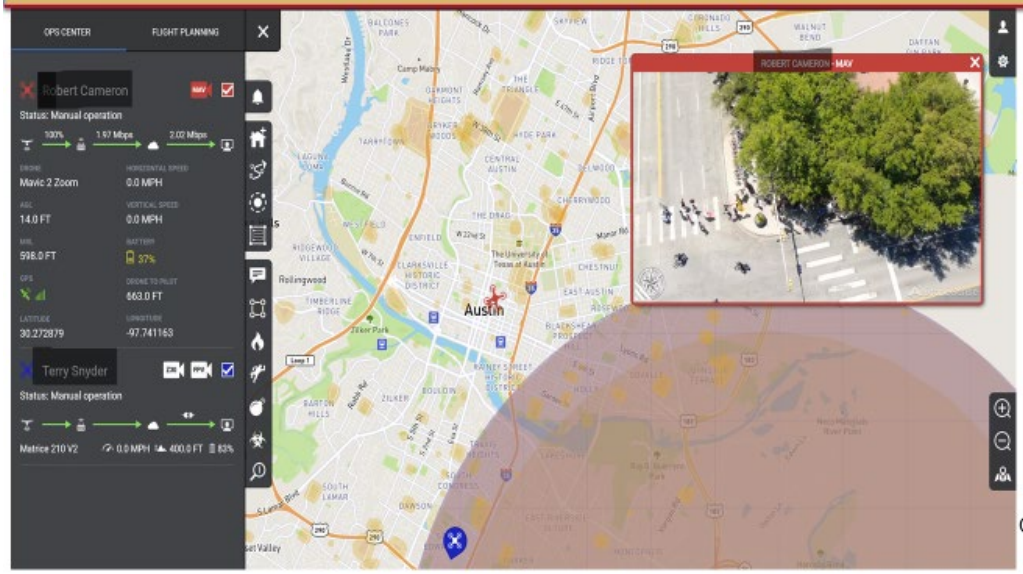
Matrice M210RTK

- 40-minute flight time (two batteries)
- Capable of utilizing multiple cameras
- Collision/obstacle avoidance sensors
- Zoom, Thermal, and High-Resolution Cameras
- Weather resistant
- ADS-B in capabilities
- Operating Frequencies
  - 2.400 - 2.4835 GHz
  - 5.725 - 5.850 GHz
- FCC IDS: SS3-M200V21811

City of Pearland, Texas

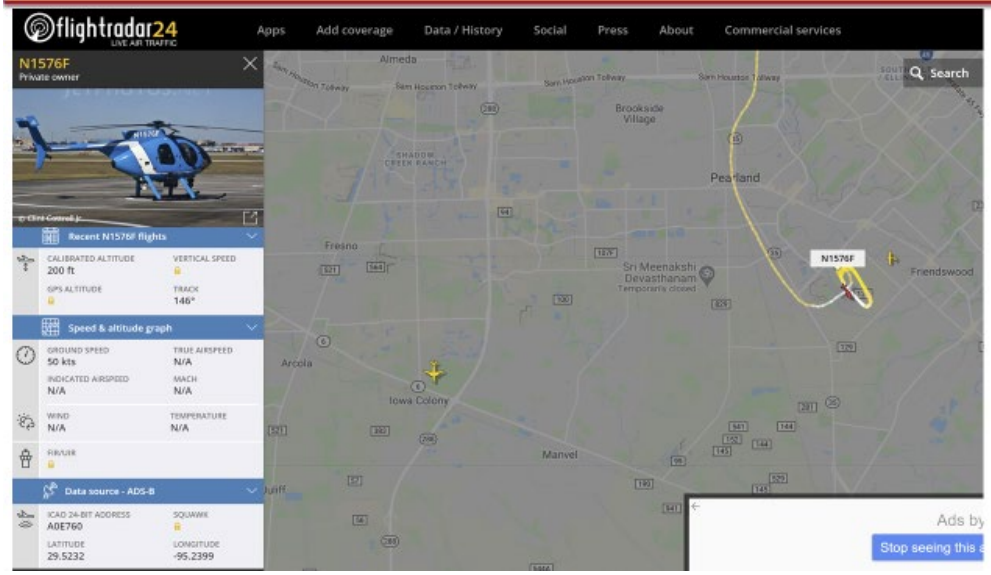
Copyright © 2021 GCPSURT All Rights Reserved

Software- DroneSense



City of Pearland, Texas

Software- FlightRadar24



City of Pearland, Texas

Copyright © 2021 GCPSURT All Rights Reserved

Pearland Police Command Vehicle

The Command Vehicle is outfitted with multiple monitors to view all available information regarding the sUAS flight. The Command Vehicle is also outfitted to enable communication with all team members and crew for the flight.

City of Pearland, Texas

City of Pearland- Structures/Obstructions

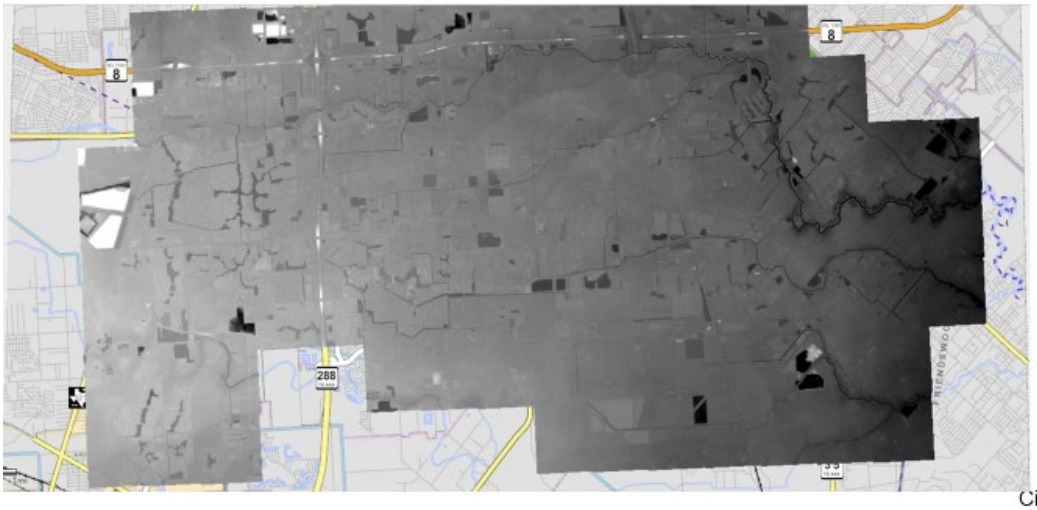
City of Pearland Environment Map

City of Pearland, Texas

Map created by CRASAR: https://arcg.is/1y5SmS

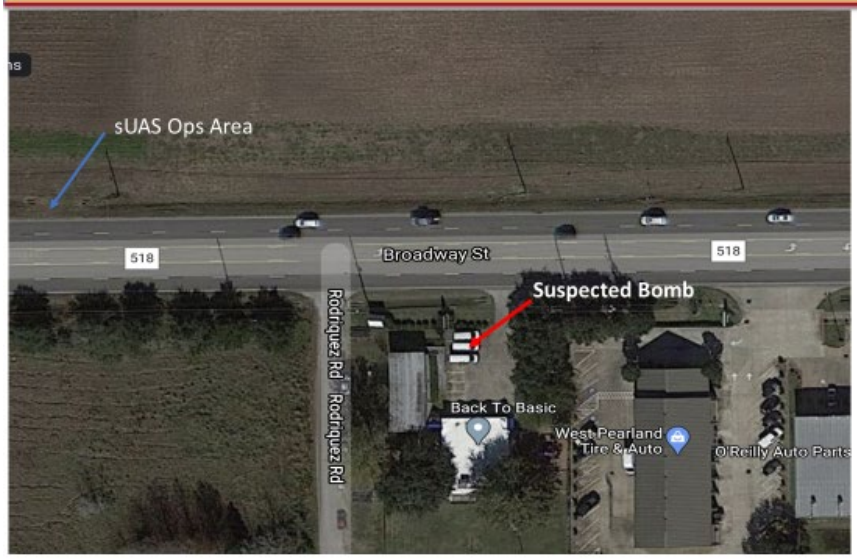
Copyright © 2021 GCPSURT All Rights Reserved

City of Pearland- Elevation



City of Pearland, Texas

Pearland PD Bomb Threat



In 2018 Back to Basic Daycare observed a suitcase placed under a day care van. A perimeter was set up and an explosive k9 called to the scene. UAS operations were requested to fly to the scene and attempt to provide images of the suitcase for pre-planning and overwatch. However, the request could not be authorized due to LOS would not be maintained while holding cover at a maximum altitude of 60ft. K9 alerted to the package and was later safely imploded.

City of Pearland, Texas

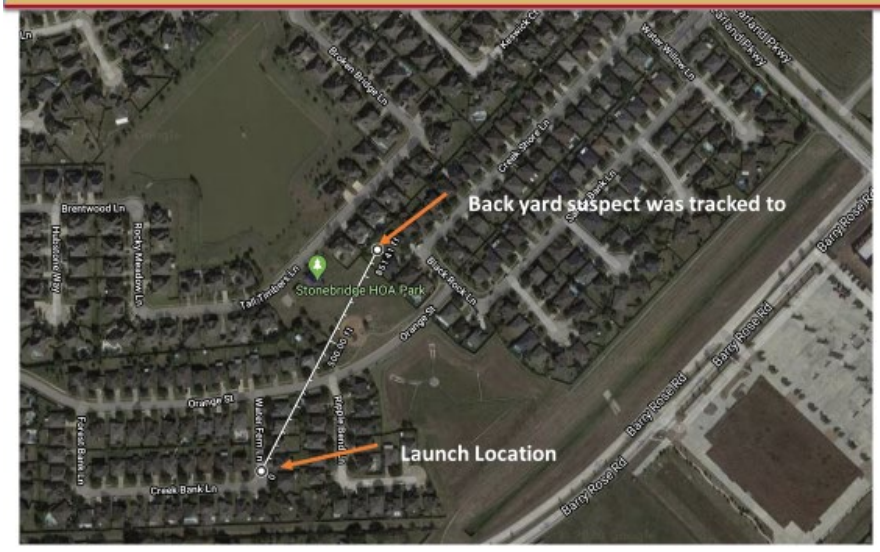
Copyright © 2021 GCPSURT All Rights Reserved

Combined Agency SWAT Team Training

Pearland Police Department is apart of a Combined Agency Response Team. One active shooter training event we had involved an active shooter with a hostage located at the Crosspoint Church playground inside one of the structures. Communications with the suspect had ceased at the time of deployment. sUAS was deployed to attempt gain eyes on the suspect. However due to the suspect being under cover, this was impossible without loosing LOS to fly lower to see under the structure. Distance from sUAS Ops to Suspect- 450ft
Max Altitude to clear buildings: 45'

City of Pearland, Texas

Suspect Tracking



Our agency deploys sUAS and K9s for suspect tracking due to the capabilities of having a birds eye view of where suspects and Officers are on the ground. This allows for us to keep Officers, suspects, and k9s safer. However, due to equipment limitations maintaining LOS is not always ideal be effective at maintaining Officer safety. Maximum altitude to clear all obstacles in the area- 80ft

City of Pearland, Texas

Copyright © 2021 GCPSURT All Rights Reserved

Suspect Tracking with K9

Due deploying sUAS in a neighborhood and having equipment limitations, this causes VLOS issues. Typically a house or tree line will block my VLOS and will force me to have to gain altitude. With the Mavic Enterprise Dual, its effective altitude with the thermal is a maximum of 100-120 feet. It is important to note that at the times of the sUAS flying momentarily into BVLOS prior to climbing or passing the residence, at no point in time did I loose connection with the sUA or have an interruption in video.

This video is an example of how important it is to maintain safe observations of the Officers

City of Pearland, Texas

Barricaded Suspect- SWAT Standoff

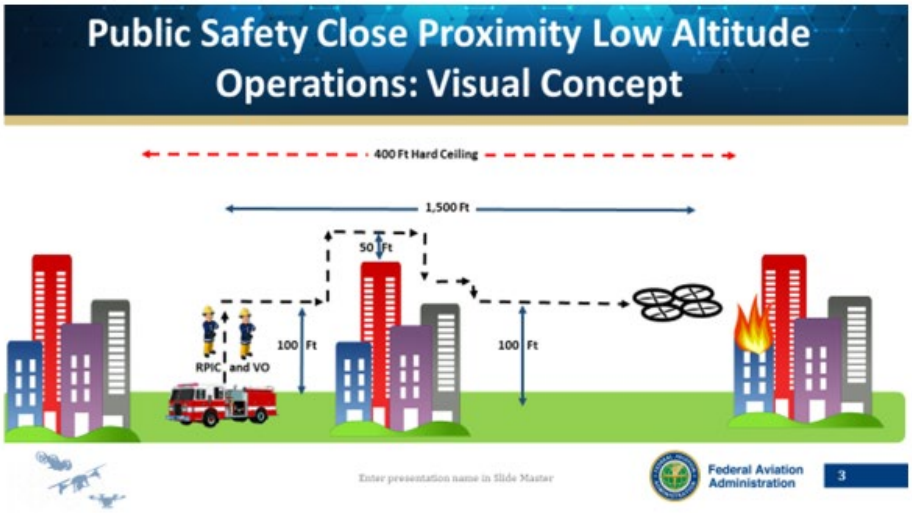
Pearland SWAT was dispatched to a barricaded suspect they were serving a warrant for. This suspect was known to have weapons and had numerous prior violent convictions. The Command Post and sUAS launching point was located at the intersection approximately 650ft away. The drive was lined with multiple trees blocking most of the VLOS unless I flew the sUA at a higher altitude. This vantage point only provided me with an overwatch position. However, the suspect was located in the northern part of the trailer next to a window. If I was able to lower the sUA BVLOS to view inside the window, I would have been able to verify which room the suspect was in, if the suspect was armed, if the suspect was alone. All of this information is critical for our team. Maximum altitude to clear all obstacles- 75ft

City of Pearland, Texas

Copyright © 2021 GCPSURT All Rights Reserved

Concept of Operations

City of Pearland, Texas



City of Pearland, Texas

Copyright © 2021 GCPSURT All Rights Reserved

ConOp- Overview

The City of Pearland sUAS team request the ability to fly BVLOS under the following conditions:

1. All flights occur at or below 150 feet AGL; and
2. All flights occur within 1,000 feet of the PIC; and
3. All flights are conducted under either our Blanket COA or Jurisdictional COA, and any provided waivers and/or addendums

City of Pearland, Texas

ConOp-Operations

1) All operations will be conducted under our Blanket COA #xxxx, our Jurisdictional COA #xxxx, and any provided waivers and addendums
2) Team personnel shall ensure the airworthiness of each aircraft prior to flights commencing
3) Distance from PIC to aircraft will not exceed 1,000'
4) Altitude will not exceed 150' AGL
5) Ceiling and distance on aircraft/remote will be set prior to flight operations for an altitude that is no higher than the maximum approved ceiling for the airspace as approved in applicable COA's, LAANC, or SGI approval.

City of Pearland, Texas

Copyright © 2021 GCPSURT All Rights Reserved

ConOp-Operations

6) Alternate/Emergency landing areas will be identified prior to takeoff. Additionally, crews will follow established procedures per our approved COA's for loss of GPS, lost link, flyaway, GCS emergency/failure, etc.
7) Return-to-Home provisions to include safe altitude, flight path, landing zone, etc. will be established prior to flight and coordinated with other aircraft and any elevated apparatus (i.e. Fire Department Aerial Ladders, video/weather masts on command vehicles, etc.)
8) A VO will be used for all flights to monitor the aircraft until it drops BVLOS

City of Pearland, Texas

ConOp-Operations

9) When aircraft is BVLOS, a dedicated VO will continue to monitor the airspace above the area of the BVLOS operation for other aircraft (manned and unmanned) to "see and avoid" or any other issues of conflict throughout operation and shall resume VO responsibilities of the aircraft when it comes back into LOS
    a) When the aircraft is BVLOS as described above, it may be possible to utilize SWAT or other Law Enforcement personnel, Bomb Squad, Hazmat Technician, or other person(s) in the dangerous area to provide limited VO or situational awareness of the UAS when it enters the area that they are operating in (the area that is BVLOS of the primary VO). If available and used, their communications with the PIC/VO will be via radio/cell phone. It is realized that this is not their primary responsibility, however, to the extent possible the UAS team will utilize this VO resource when available.

City of Pearland, Texas

Copyright © 2021 GCPSURT All Rights Reserved

ConOp-Operations

10) As needed, a secondary UAS with a secondary PIC and VO shall be used as an elevated over watch of the airspace above the aircraft that is BVLOS to look for any approaching aircraft (manned or unmanned) to "see and avoid" during this BVLOS operation. This secondary aircraft operation shall be coordinated directly with the BVLOS aircraft PIC and VO for maintaining a safe area of operation that is clear of other aircraft (this may not always be needed as sometimes the max AGL is only ~50' or less). Additionally, the VO shall still maintain look out to "see and avoid" all other operational airspace. The secondary aircraft will only be used to maintain situational awareness of the very small area that the VO cannot see.

City of Pearland, Texas

ConOp-Operations

11) When operating a secondary aircraft for observing the airspace, a coordination/deconfliction plan shall be in place for altitude separation, Lost Link, Return-to-Home paths, and any other safe aircraft operational needs.

12) PIC will ensure that a crew member monitors FlightRadar 24, DroneSense, DJI Airsense and/or other subscribed program to alert crew of aircraft approaching operational area.

13) Applicable ATCT's will be notified and coordinated with as applicable.

City of Pearland, Texas

Copyright © 2021 GCPSURT All Rights Reserved

ConOp-Operations

14) Crews will monitor our portable aircraft radio and the applicable channel/frequency for the area in the event direct communications are needed with manned aircraft and/or the ATCT.
15) When applicable, the ADS-B function shall be in use and monitored on our DJI products to monitor for manned aircraft in the area.
16) Anti-collision lighting visible from 3 miles will be utilized on aircraft at all times during these operations (night and day)

City of Pearland, Texas

ConOp-Operations

17) As needed, an Air Operations Boss will be established for operations involving other aircraft such as MedEvac, military (USCG, etc.), news media aircraft, etc. and a communications plan will be established that all agree on and can conform to
18) In the event of a miscommunication, lack of communication, or other issue that results in a manned aircraft entering into the direct area of UAS operations, the UAS(s) will immediately yield the right of way and safely clear the area/land as appropriate for the situation presented

City of Pearland, Texas

Copyright © 2021 GCPSURT All Rights Reserved

ConOp-Operations

19) UAS Team will train on these BVLOS operations at least quarterly. This training will simulate BVLOS operations, but will utilize actual VO's at all times

20) Training records for these BVLOS training sessions will be maintained and readily available for inspection upon request

City of Pearland, Texas

ConOps- Crew Resource Management

Required Crew Members:

1) PIC-Primary
2) VO crew
3) Logistics/technical support
4) Airspace/Weather Monitor
5) Incident Command Liaison

Supplemental/As Needed

1) PIC-Secondary sUA
2) VO-Secondary sUA
3) Forward secondary Vos
4) Communications
5) Air Operations Boss
6) Data Manager

City of Pearland, Texas

Copyright © 2021 GCPSURT All Rights Reserved

Conclusion

- Many hours of training and simulating scenarios (under current COA requirements and using VO's) to develop the operational procedures described in this waiver request
- It is our opinion and belief that Low Altitude/Close Proximity BVLOS missions can be conducted safely under the proposed waiver
- We take great pride in our safety record for the many hours of flight time we have and the many missions we have conducted
- The proposed waiver would allow our team to provide UAS operations over a non populated area or an area that is only populated by those involved in the incident
- Operational area is that in which a manned aircraft typically cannot fly (<150' AGL) or will not fly without a coordination of airspace
- Not being able to conduct such operations may put lives and/or property at risk

City of Pearland, Texas

Questions, Comments, or Concerns?

Thank you for your time!

City of Pearland, Texas

Copyright © 2021 GCPSURT All Rights Reserved

Review and Responses

At the conclusion of the presentation, you will receive a follow up email advising the participants will have x days to provide comments, concerns, or clarification regarding your ConOp. My response window for my review was 7 days. It should be noted that I received an email on the 10th day with the completed review. The review is sent to you via email and the comments and concerns are provided via excel spreadsheet. You will be required to respond to the comments, answer the concerns, and make the requested adjustments. It is important to note, not all 23 participants responded to the review. I have provided a snapshot of the comments and my responses below:

1		*Steve CTR Pansky - AUS-430 / AJV-P22*		Thank you for your time and consideration Steve.
2				
3	BVLOS Presentation ConOps Operations bullet 19	*UAS Team will train on these BVLOS operations at least Quarterly. This training will simulate BVLOS operations, but will utilize actual VO's at all times.*	Based on recent discussions surrounding training by public agencies, the FAA office of Legal Council (AGC) has clarified their position that training operations being conducted by public aircraft operators do not meet the Governmetnal function definition (title 49 USC 40125(a)2) and that a public aircraft operator, in this case, the City of Pearland would not be able to do any training in support of operations to be conducted under their approved COAs. As such, It would seem appropriate to brief the city of Pearland that all training operations must be conducted under 14 CFR Part 107 and as such would need to apply for a 107.31 wavier so as to be able to conduct training operations beyond the pilot's visual line of sight.	As stated in the ConOp Document under section 20: "UAS Team will train on these BVLOS operations at least quarterly. This training will simulate BVLOS operations, but will utilize actual VO's at all times." As such, training environments will be conducted using a forward visual observer at all times who will maintain VLOS throughout the duration of the event. The only person who will be BVLOS will be the PIC. The PIC will maintain effective communication with all VO's at all times and will adhere to this waiver's requirements for training purposes. All pilots for the Pearland Police Department are Part 107 certified and certification is a requirement for the team. All VO's for the Pearland Police Department are trained and certified to the night operations standard.
4				
5		*Kevin Aurandt - AJT-3*		Thank you for your time and consideration Kevin
6			Suggest approval as an Extended/Beyond Line of Sight operation with the provision the UAS	Thank you for the feedback and support.
7				
8		*John Reinhardt - AUS-410*		Thank you for your time and consideration John
9			No comment or objection.	Thank you for the feedback and support.
10				
11		*Tony Walsh - NATCA*		Thank you for your time and consideration Tony
12				
13	N/A	*N/A*	No comments from NATCA. This seems like a well thought out ConOps that could be considered best practice material in my opinion.	Thank you for the feedback and support.
14				
15		*Jimmie Pharmakis - Central Service Center*		Thank you for your time and consideration Jimmie
16			No comments.	Thank you for the feedback and support.
17				
18		*Sheila Marlano - Air-6B4*		Thank you for your time and consideration Sheila
19	N/A	*ADS-B In*	Identify the type of ADS-B In transponder. Is it a Class A1 or higher system?	DJI AirSense receives information broadcast from 1090ES (RTCA DO-260B) and UAT (RTCA DO-282B). Thus, the ADS-B reciever is an A1 or higher system.
20	N/A	*Lesson Learned*	Provide any lesson learned that may help us evaluate other types of waiver applications. Especially report any C2 or BVLOS equipment failures.	If you could provide me with an email I would be happy to keep you updated on our program and experience.
21				
22		*Andrew Guion - AIR-694*		Thank you for your time and consideration Andrew
23	N/A	*N/A*	From AIR perspective, I see no reason why this waiver request should not be approved.	Thank you for the feedback and support.

Once all your responses are resubmitted, they will be reviewed again until there is no further comments or concerns.

Approval

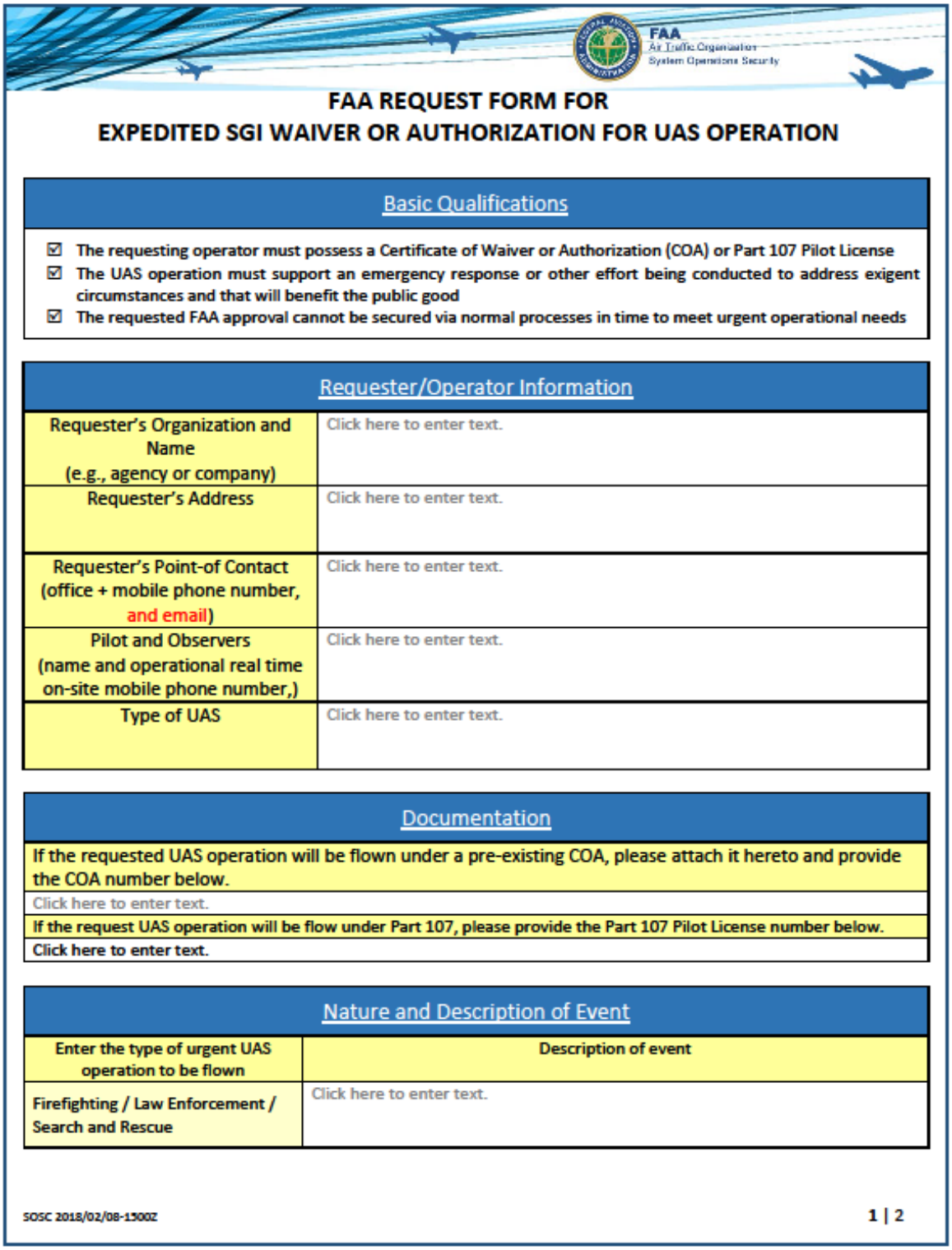
Once all responses have been finalized, you will receive an email stating: The AJV-P22 91.113 Waiver Team has reviewed and adjudicated your agency's responses to the FAA comments. The FAA commenters have concurred with the responses. Your agency's request for a waiver to 14 CFR 91.113(b) continues to move forward in the review process. Please submit a COA application in the FAA COA Application Process System (CAPS) so that a COA number can be assigned and your 91.113 waiver request can continue to be processed.

At this time, you will need to create an application and send them the COA application number to be processed as stated. This could take some time to be processed through legal. Once the waiver is approved by legal, the waiver is approved.

Copyright © 2021 GCPSURT All Rights Reserved

Appendix

Appendix A



FAA
Air Traffic Organization
System Operations Security

FAA REQUEST FORM FOR
EXPEDITED SGI WAIVER OR AUTHORIZATION FOR UAS OPERATION

Basic Qualifications
☑ The requesting operator must possess a Certificate of Waiver or Authorization (COA) or Part 107 Pilot License
☑ The UAS operation must support an emergency response or other effort being conducted to address exigent circumstances and that will benefit the public good
☑ The requested FAA approval cannot be secured via normal processes in time to meet urgent operational needs

Requester/Operator Information	
Requester's Organization and Name (e.g., agency or company)	Click here to enter text.
Requester's Address	Click here to enter text.
Requester's Point-of Contact (office + mobile phone number, and email)	Click here to enter text.
Pilot and Observers (name and operational real time on-site mobile phone number,)	Click here to enter text.
Type of UAS	Click here to enter text.

Documentation
If the requested UAS operation will be flown under a pre-existing COA, please attach it hereto and provide the COA number below.
Click here to enter text.
If the request UAS operation will be flow under Part 107, please provide the Part 107 Pilot License number below.
Click here to enter text.

Nature and Description of Event	
Enter the type of urgent UAS operation to be flown	Description of event
Firefighting / Law Enforcement / Search and Rescue	Click here to enter text.

SOSC 2018/02/08-1500Z

1 | 2

Copyright © 2021 GCPSURT All Rights Reserved

Certificate of Operation (COA) Application Processing System (CAPS) Access Request Form

The Certificate of Authorization (COA) Application Processing System (CAPS) is a web application developed in support of the Federal Aviation Administration (FAA) Modernization and Reform Act of 2012, Pub. L. 112-95 ("FMRA") § 333 and 334, Special Rules for Certain Unmanned Aircraft Systems. FMRA directs the FAA to safely integrate unmanned aircraft systems (UASs) into the National Airspace System (NAS). CAPS provides and interactive online application process to request a COA for a specific flight operation, blanket public COA - permitting nationwide flights in Class G airspace at or below 400 feet, self-certification of the UAS pilot, and the option to obtain emergency COAs(e-COAs) under special circumstances.

In order to gain access to CAPS, pPlease complete this form and submit to 9-AJV-115-UASOrganization@faa.gov and allow 1 to 2 business days for processing. For questions about this form, send and email to to 9-AJV-115-UASOrganization@faa.gov.

Also please visit www.faa.gov/uas if you are not sure about which type of waiver or authorization is needed for your UAS operation.

Section 1: Requester Information

Date	Name
07/11/2018	Brandon Karr
Agency/University	City of Pearland
Telephone	(281) 825-2060
Email	bkarr@pearlandtx.gov

Is requester a contractor? ○ Yes ◉ No If Yes, proceed to Section 2. If No, proceed to Section 3.

Section 2: Contractor Requests

Contractors must submit this form along with a signed letter from the authorizing agency for public requests.

Example #1: This letter is to authorize (Contractor Name), of (Company Name), (Company Address), online access to the (Agency/University) COA documents and process.

Example #2: This letter is to authorize (Contractor Name), of (Company Name), (Company Address), online acces to the (Agency/University) COA documents, process, and to serve as the primary point of contact in all COA matters.

Section 3: Permissions

☑ I am requesting the ability to draft, update, and commit COAs on behalf of the agency/university listed above.
I will be applying to ○ Civil and/or ◉ Public COAS (Public COAs require a letter of declaration)

Section 4: UAS Operation(s)

Area of Responsibility (AOR) In this section please indicate the county and state where the UAS will operate.	Harris County, Fort Bend County, and Brazoria County, TX
Provide us with a reason why you are using a UAS. **Example #1:** I will submit COA applications for the (Name of University) which is developing a UAS program to address law enforcement and emergency response applications. **Example #2:** I am a UAS operator and the UAS Tier 1 Projects Officer for Marine Corps Systems Command and will be conducting flight demonstrations for VIP visitors. (SES and Flag officers). I will need to establish an account in order to create COA requests. **Example #3:** I will submit COA applications for the (Name of University) which is developing a UAS program for the purpose of research and development. Initially research efforts will focus on agricultural applications but eventually will move into other areas of UAS technology development and applications. **Example #4:** I just started working UAS Airspace issues for the Air Force Special Operations Command. I will need to establish an account in order to create COA requests.	The City of Pearland resides in Brazoria County, Harris County, and Fort Bend County. I will submit COA appications for the City of Pearland, Pearland Police Department, which is developing a sUAS program to address law enforcement and emergency response applications within the AOR.

Copyright © 2021 GCPSURT All Rights Reserved

Appendix C

City of Pearland Declaration Letter

Legal Department
City of Pearland
3519 Liberty Drive
Pearland, Texas 77581
Phone: 281.652.1664
Fax: 281.652.1679

pearlandtx.gov

April 30, 2020

Mr. Randy Willis
Acting Air Traffic Manager
Unmanned Aircraft Systems Office
Federal Aviation Administration 490
L'Enfant Plaza, Suite 3200
Washington, DC 20024

RE: City of Pearland as Public Entity for Purposes of CoA

Dear Mr. Willis,

The City of Pearland ("City") has applied through the City of Pearland Police Department for a renewal of its Certificate of Authorization (CoA) to operate their small Unmanned Aircraft System (UAS) within the City of Pearland.

The City is a political subdivision of the state of Texas and is a Home-Rule municipality as set forth in the Texas Local Government Code. A Home-Rule municipality is one of the four types of municipalities that may be created in accordance with the Texas Constitution and Texas state statutes. Specifically, Section 5.004 of the Texas Local Government Code states, *"A municipality is a home rule municipality if it operates under a municipal charter that has been adopted or amended as authorized by Article XI, Section 5 of the Texas Constitution."* The Charter of the City of Pearland was adopted on February 6, 1971.

This information should be sufficient to show that the City is a public entity as a political subdivision of the State of Texas. Additionally, the Pearland Police Department is the law enforcement agency for the City. As such, any aircraft operated by the City, operating within the parameters of Public Aircraft Operation (49 USC 40102(a)(41)(C)) should be recognized as a public aircraft as defined in 14 CFR 1.1.

Copyright © 2021 GCPSURT All Rights Reserved

Appendix D

Mavic 2 Enterprise

Climb Rate:	984 ft/min
Decent Rate:	590.1 ft/min
Turn Rate:	6000 deg/min
Bank Angle:	25deg
Min Cruise Speed Kts:	0kts
Max Cruise Speed Kts:	39kts
Max Altitude MSL:	19685 Ft
Minimum Altitude MSL:	0
Approach Speed Knots:	0
Range Nautical Miles:	4.3
Launch Method:	Vertical Take Off
Gross Takeoff Weight:	1.98lbs
Endurance HH:MM:	00:31
Recovery Method:	Vertical Landing

Phantom 4 Pro V2

Climb Rate:	984 ft/min
Decent Rate:	590.1 ft/min
Turn Rate:	9000 deg/min
Bank Angle:	25 deg
Min Cruise Speed Kts:	0kts
Max Cruise Speed Kts:	39kts
Max Altitude MSL:	19685 Ft
Minimum Altitude MSL:	0
Approach Speed Knots:	0
Range Nautical Miles:	4.3
Launch Method:	Vertical Take Off
Gross Takeoff Weight:	3.03lbs

Copyright © 2021 GCPSURT All Rights Reserved

Endurance HH:MM:	00:30
Recovery Method:	Vertical Landing

DJI Inspire 2

Climb Rate:	984 ft/min
Decent Rate:	590.1 ft/min
Turn Rate:	9000 deg/min
Bank Angle:	25 deg
Min Cruise Speed Kts:	0kts
Max Cruise Speed Kts:	98kts
Max Altitude MSL:	19685 Ft
Minimum Altitude MSL:	0
Approach Speed Knots:	0
Range Nautical Miles:	4.3
Launch Method:	Vertical Take Off
Gross Takeoff Weight:	7.58lbs
Endurance HH:MM:	00:27
Recovery Method:	Vertical Landing

Matrice M200v1 Series

Climb Rate:	984 ft/min
Decent Rate:	590.1 ft/min
Turn Rate:	9000 deg/min
Bank Angle:	25 deg
Min Cruise Speed Kts:	0kts
Max Cruise Speed Kts:	82kts
Max Altitude MSL:	19685 Ft
Minimum Altitude MSL:	0
Approach Speed Knots:	0

Copyright © 2021 GCPSURT All Rights Reserved

Range Nautical Miles:	4.3
Launch Method:	Vertical Take Off
Gross Takeoff Weight:	9.98lbs
Endurance HH:MM:	00:38
Recovery Method:	Vertical Landing

Matrice M200 Series V2

Climb Rate:	984 ft/min
Decent Rate:	590.1 ft/min
Turn Rate:	7200 deg/min
Bank Angle:	25 deg
Min Cruise Speed Kts:	0kts
Max Cruise Speed Kts:	81kts
Max Altitude MSL:	9842 Ft
Minimum Altitude MSL:	0
Approach Speed Knots:	0
Range Nautical Miles:	5
Launch Method:	Vertical Take Off
Gross Takeoff Weight:	10.33lbs
Endurance HH:MM:	00:38
Recovery Method:	Vertical Landing

Copyright © 2021 GCPSURT All Rights Reserved

Pearland Police Department

2555 Cullen Parkway · Pearland, Texas · 77581 · 281.997.4100

J. L. Spires – Chief of Police

June 20, 2018

This letter is to address the Pearland Police Department UAS COA Case for the Airworthiness Certificate of all sUAS employed by the Pearland Police Department.

The airworthiness of all DJI sUAS have been determined to be airworthy based on the testing data and evaluation data provided by DJI and the review by the Pearland Police Department. The UAS is serviceable and airworthy for the intended use as advertised by DJI subject to the warranties and representations offered by DJI. DJI has advised that the testing and evaluation of the UAS was conducted in compliance with airworthiness certification criteria established by DJI.

The Pearland Police Department will maintain a continued Airworthiness program that includes maintenance and training of the UAS and will be maintained in an airworthy condition to conduct flights in the National Airspace System.

The attached page addresses the warnings and limitations of the UAS.

The point of contact for the Pearland Police Department is Police Officer Brandon Karr, BKarr@Pearlandtx.gov, (281) 997-4261.

Copyright © 2021 GCPSURT All Rights Reserved

Appendix F

Blanket Class G COA

FAA FORM 7711-1 UAS COA Attachment
Blanket Area- Public Agency sUAS COA
2018-CSA-2102-COA

DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

CERTIFICATE OF WAIVER OR AUTHORIZATION

ISSUED TO
Public Agency – City of Pearland, Texas — Part 91

ADDRESS
2555 Cullen Blvd
Pearland, TX 77581

This certificate is issued for the operations specifically described hereinafter. No person shall conduct any operation pursuant to the authority of this certificate except in accordance with the standard and special provisions contained in this certificate, and such other requirements of the Federal Aviation Regulations not specifically waived by this certificate.

OPERATIONS AUTHORIZED
Operation of small Unmanned Aircraft System (UAS) weighing less than 55 pounds and operating at speeds of less than 87 Kts. (100 mph) in Class G airspace at or below 400 feet Above Ground Level (AGL) for the purpose of public aircraft operations.

LIST OF WAIVED REGULATIONS BY SECTION AND TITLE
N/A

STANDARD PROVISIONS

1. A copy of the application made for this certificate shall be attached and become a part hereof.
2. This certificate shall be presented for inspection upon the request of any authorized representative of the Federal Aviation Administration, or of any State or municipal official charged with the duty of enforcing local laws or regulations.
3. The holder of this certificate shall be responsible for the strict observance of the terms and provisions contained herein
4. This certificate is nontransferable.

Note-This certificate constitutes a waiver of those Federal rules or regulations specifically referred to above. It does not constitute a waiver of any State law or local ordinance.

SPECIAL PROVISIONS

Special Provisions Nos. A and B, inclusive.

The certificate is effective from July 27, 2018 to July 26, 2020, inclusive, and is subject to cancellation at any time upon notice by the Administrator or his/her authorized representative.

BY DIRECTION OF THE ADMINISTRATOR

FAA Central Service Center, AJV C23 (Region) — John A. Witucki (Signature)

July 26, 2018 (Date) — (A) Tactical Operations Manager, CSA (Title)

FAA Form 7711-1 (7-74)

Version Date: December 14, 2017

Copyright © 2021 GCPSURT All Rights Reserved

FAA FORM 7711-1 UAS COA Attachment
Public Agency sUAS COA
2020-CSA-5752-COA

DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

CERTIFICATE OF WAIVER OR AUTHORIZATION

ISSUED TO
Public Agency –City Of Pearland Part 91

ADDRESS
City Of Pearland
2555 Cullen Blvd.
Pearland, TX 77581

This certificate is issued for the operations specifically described hereinafter. No person shall conduct any operation pursuant to the authority of this certificate except in accordance with the standard and special provisions contained in this certificate, and such other requirements of the Federal Aviation Regulations not specifically waived by this certificate.

OPERATIONS AUTHORIZED

Operation of small Unmanned Aircraft System(s), weighing less than 55 lbs., in Class B, D, E, and G airspace, at or below 400 feet Above Ground Level (AGL), (See attachment 1) Under the jurisdiction of William P. Hobby (HOU) Air Traffic Control Tower (ATCT), Houston Intercontinental (IAH) ATCT, Houston (I90) Terminal Radar Approach Control (TRACON), Sugarland Regional (SGR) ATCT, Houston Executive (TME) ATCT, Ellington (EFD) ATCT, David Wayne Hooks Memorial (DWH) ATCT, Conroe-North Houston Regional (CXO) ATCT, Easterwood Field (CLL) ATCT, Jack Brooks Regional (BPT) ATCT,Scholes International (GLS) ATCT, Houston Air Route Traffic Control Center (ZHU ARTCC). See Special Provisions.

LIST OF WAIVED REGULATIONS BY SECTION AND TITLE

N/A

STANDARD PROVISIONS

1. A copy of the application made for this certificate shall be attached and become a part hereof.
2. This certificate shall be presented for inspection upon the request of any authorized representative of the Federal Aviation Administration, or of any State or municipal official charged with the duty of enforcing local laws or regulations.
3. The holder of this certificate shall be responsible for the strict observance of the terms and provisions contained herein
4. This certificate is nontransferable.

Note-This certificate constitutes a waiver of those Federal rules or regulations specifically referred to above. It does not constitute a waiver of any State law or local ordinance.

SPECIAL PROVISIONS

Special Provisions Nos. A thru I, inclusive, are set forth on the reverse side hereof.

The certificate is effective from June 2,2020 to June 1, 2022, inclusive, and is subject to cancellation at any time upon notice by the Administrator or his/her authorized representative.

BY DIRECTION OF THE ADMINISTRATOR

FAA Central Area Service Center, AJV-C23 (Region)

Marty Skinner (Signature)

Tactical, Operations Manager, CSA, AJV-C23 (Title)

FAA Form 7711-1 (7-74)

Version Date: May 2019

Copyright © 2021 GCPSURT All Rights Reserved

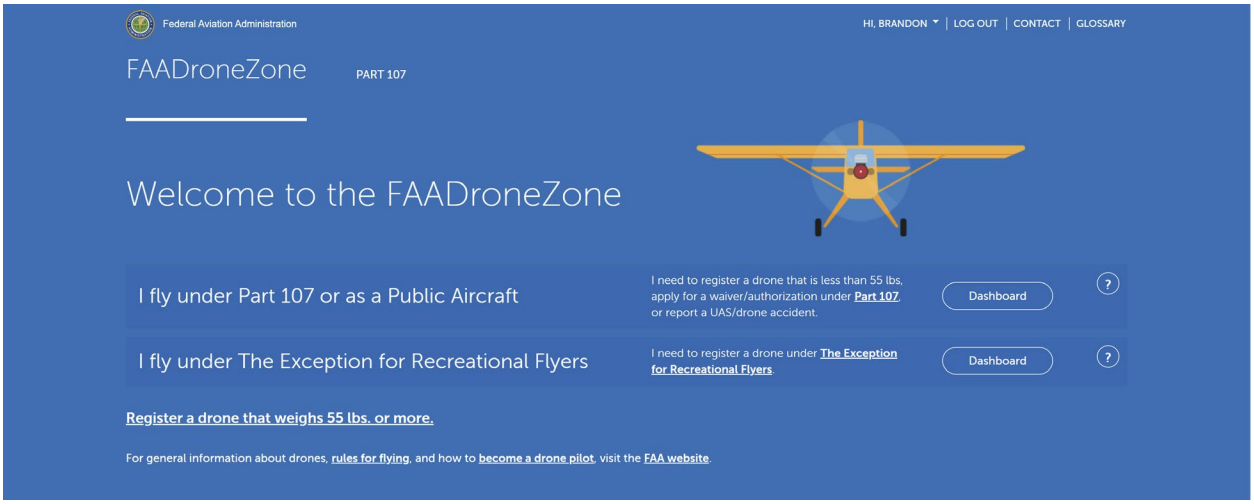
Part 107 Authorization and Waiver Process

The FAA has done an outstanding job explaining the Part 107 authorization and waiver application process. For in depth explanations feel free to check the following link for videos and documents regarding the process created by the FAA:

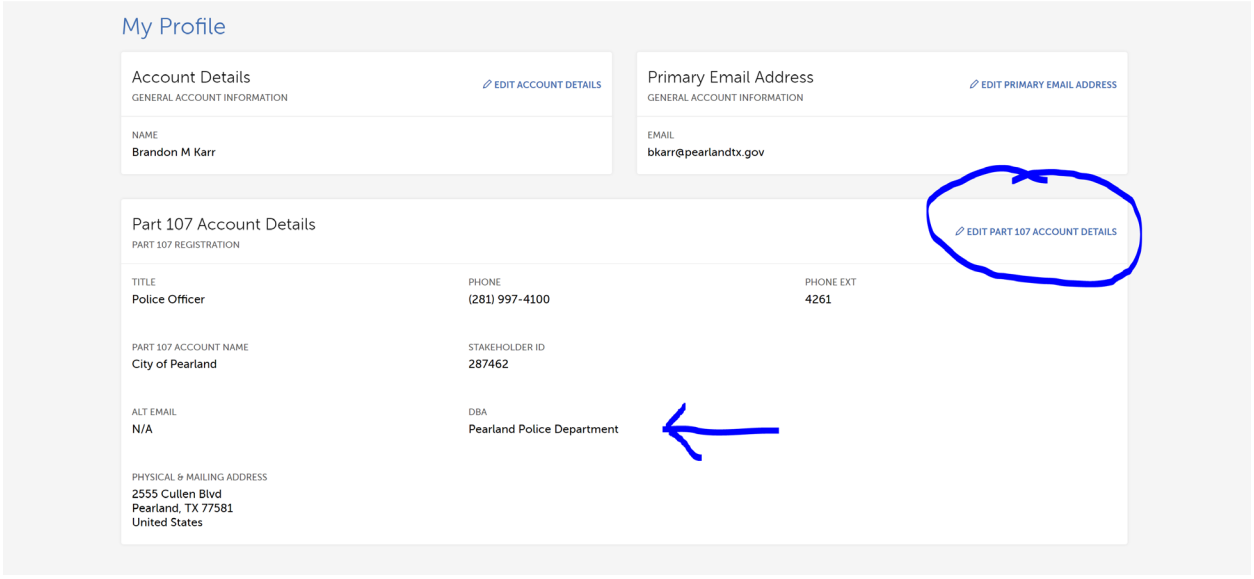
https://www.faa.gov/uas/commercial_operators/part_107_waivers/

DroneZone

DroneZone is the FAA's Part 107 and recreational pilot online hub. DroneZone allows for you to register your drones. It allows you to apply for your waivers and authorizations. Finally, it also allows for you to report crash incidents that are required by Part 107.



The first step is to create a login for Part 107 operations, if you haven't already. It is important to note, if you are wanting to create COAs that are for your agency and not you as an individual, you will need to adjust the user information and add your agency's name under the DBA (Doing Business As).



Copyright © 2021 GCPSURT All Rights Reserved

Once your account is properly set up you can begin applying for Part 107 COAs. To begin the application process you have to scroll down to the Part 107 Waivers & Airspace Authorizations section of the dashboard. This section is where Part 107 operators may use the FAADroneZone to request an operational waiver to certain requirements of the Small UAS Rule (Part 107) and/or an airspace authorization in controlled airspace below 400 feet. You can apply for 3 types of waivers or authorizations. Those are as follows:

OPERATIONAL WAIVER: Use this to request a waiver to the provisions of Part 107 waivable under 14 C.F.R. 107.200 (e.g. operations at night, operations from a moving vehicle, operation beyond line of sight, operation over people, operation requiring a visual observer, operations of multiple UA by one pilot, operation near aircraft, or waivers from operating limitations on groundspeed, altitude, minimum visibility, or minimum distance from clouds).

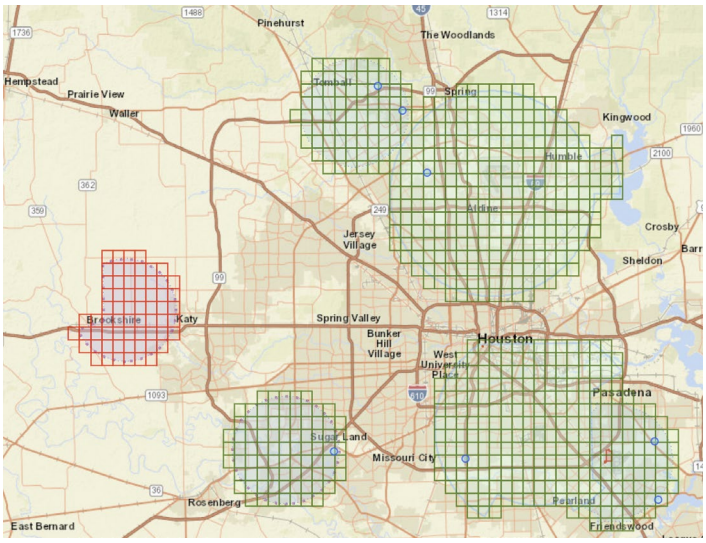
AIRSPACE AUTHORIZATION: Use this to request access to controlled airspace. An airspace authorization is the mechanism by which an operator may seek Air Traffic Control (ATC) approval to operate in controlled airspace. Authorizations can be for a specific location or for broad areas governed by a single ATC jurisdiction.

AIRSPACE WAIVER: Use this to request a waiver from 14 C.F.R. § 107.41. Airspace Waivers may be issued where the applicant can demonstrate safety mitigations through equipage that their UAS can safely operate in controlled airspace without seeking ATC authorization prior to each operation. Processing times for airspace waivers are significantly longer than processing times for airspace authorizations. Do not submit a request for an airspace waiver unless you've been instructed to do so by the FAA Emerging Technologies Team.

Airspace Authorization

LAANC

LAANC is the Low Altitude Authorization and Notification Capability, a collaboration between FAA and Industry. It directly supports UAS integration into the airspace. LAANC provides drone pilots with access to controlled airspace at or below 400 feet and below the designated altitude ceiling on the UAS Facility Map. Maps to help raise awareness of where pilots can and cannot fly. LAANC activated airports are depicted in green. Non-LAANC activated airports are depicted in red.

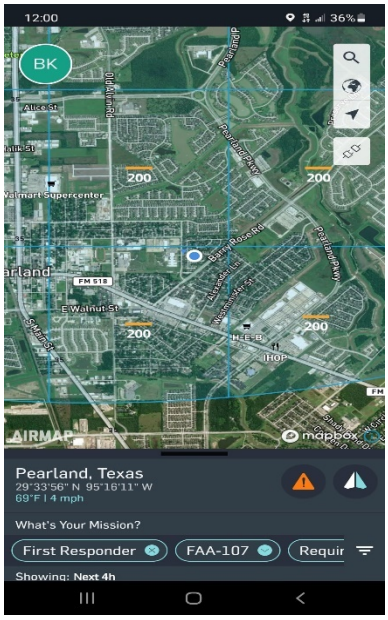


Copyright © 2021 GCPSURT All Rights Reserved

LAANC also enhances situational awareness by providing Air Traffic Professionals with visibility into where and when drones are operating, that have requested access in the controlled airspace. Through the UAS Data Exchange, the capability facilitates the sharing of airspace data between the FAA and companies approved by the FAA to provide LAANC services. The companies are known as UAS Service Suppliers — and the desktop applications and mobile apps to utilize the LAANC capability are provided by the UAS Service Suppliers (USS).

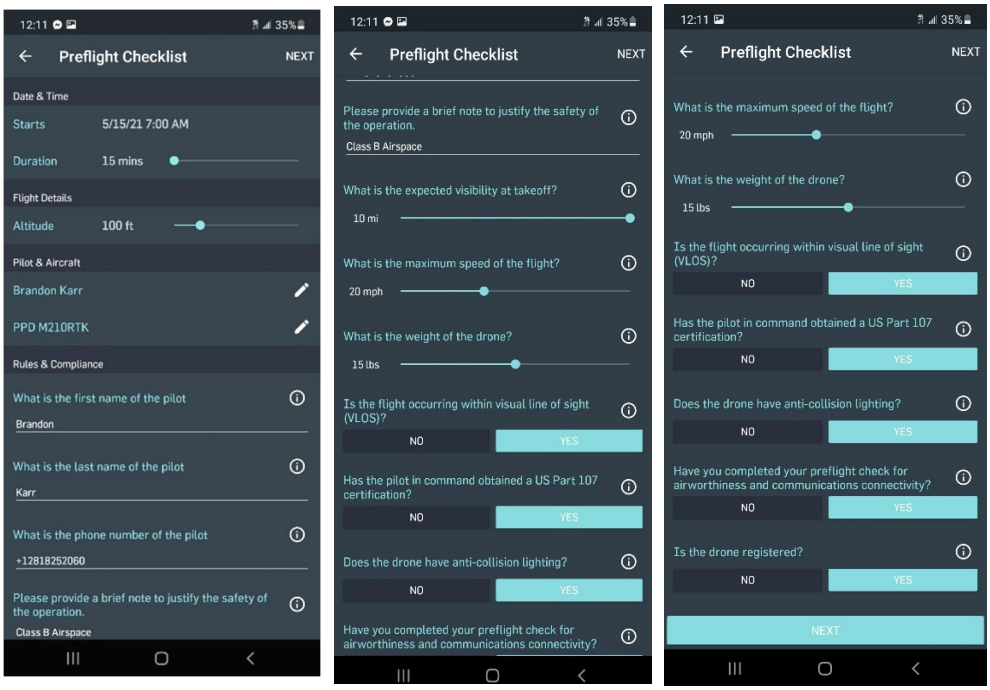
Part 107 operators should use LAANC when flying in a LAANC enabled area. The process is fairly simple, but can vary slightly depending on what USS you decide to use.

1) The first step is to register or log into your preferred USS provider. Once logged in, you will select the area your operation will be conducted

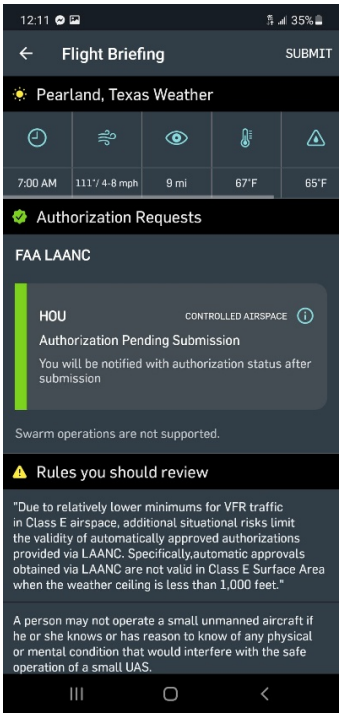


2) Next select your area of operations. Then select the next or continue button.
3) Answer the series of safety questions that arise. For the app that I use, I can select future deployments or immediate deployments. It is important to note, if your deployment duration goes into the night or if your deployment is starting after civil twilight, you will be denied the LAANC request. It is also important to ensure the maximum altitude selected is under the UASFM grid. For example: if your airspace grid for your deployment is a 200ft grid and you request 300 feet, your request could be denied.

Copyright © 2021 GCPSURT All Rights Reserved



4) Once all the questions have been answered you will be briefed on the likelihood the authorization will be approved.

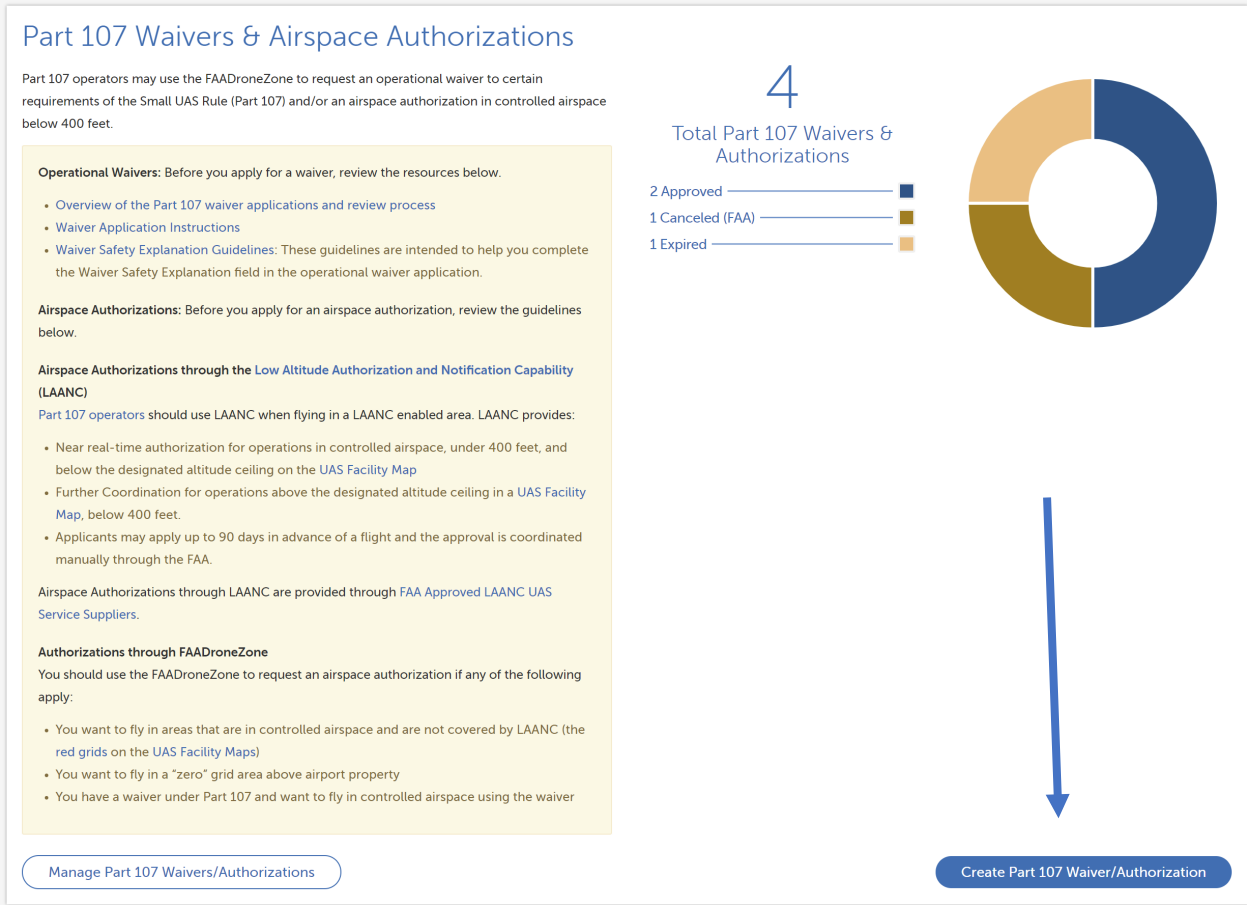


Once the request is approved (usually extremely quickly), it is good practice to save the token information for your flight logs and reports.

Copyright © 2021 GCPSURT All Rights Reserved

Non-LAANC Activated Airspaces

If your jurisdiction has controlled airspace and that airspace is not a LAANC activated airspace, you will need to apply through DroneZone for an Airspace Authorization. Once logged into DroneZone, you will need to start an airspace authorization application.



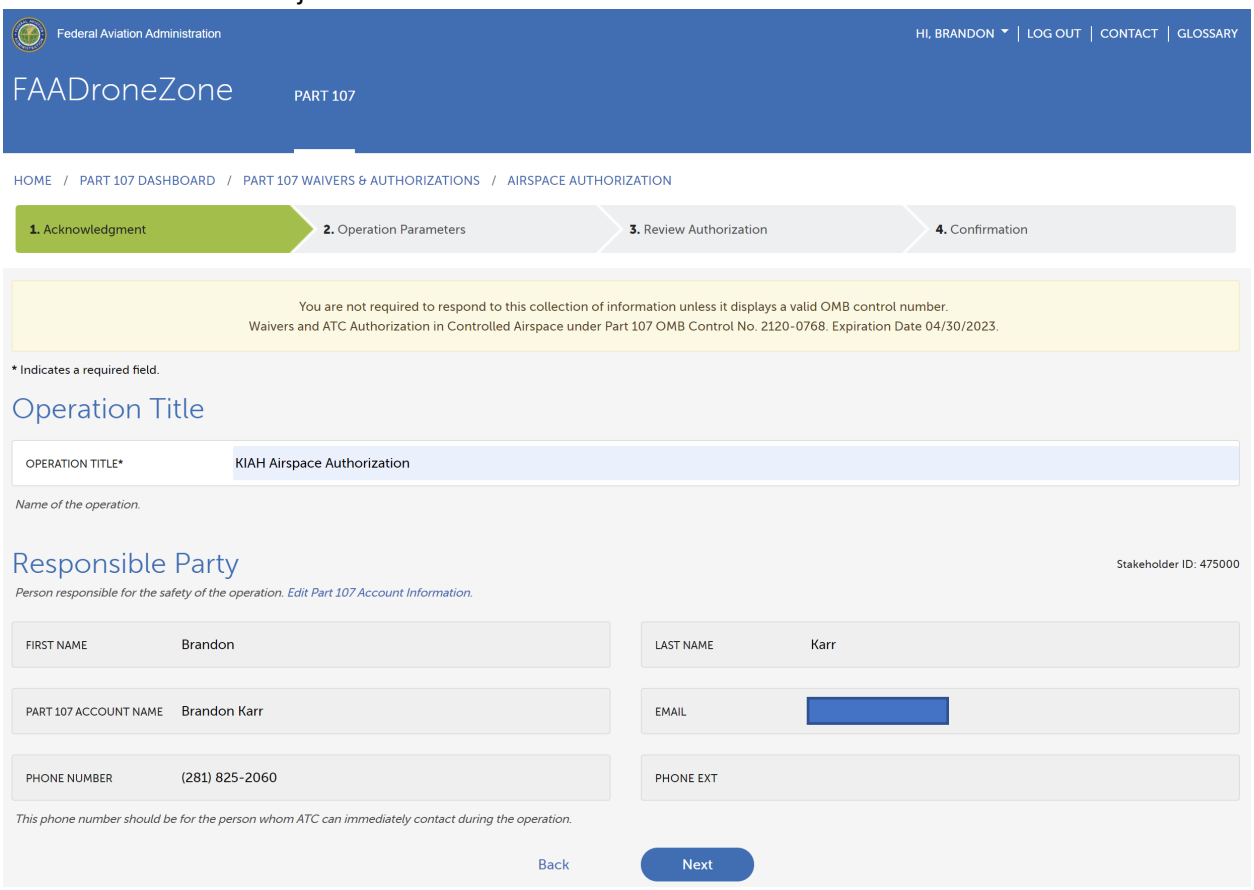
Next, a pop up will show asking which type of application you wish to complete. You will select the Airspace Authorization option. Once you start the application there is not an option to save and return at a later time. Unfortunately if you stop, all the information and progress you have completed will be lost.

Acknowledgements

This is the first section of the application process. The Operational Title is the only fillable field in this section. Which is the title of your airspace waiver. I usually put the name of the airspace authorization in this field. Be sure that all of the responsible party information is correct. If there are any errors, you

Copyright © 2021 GCPSURT All Rights Reserved

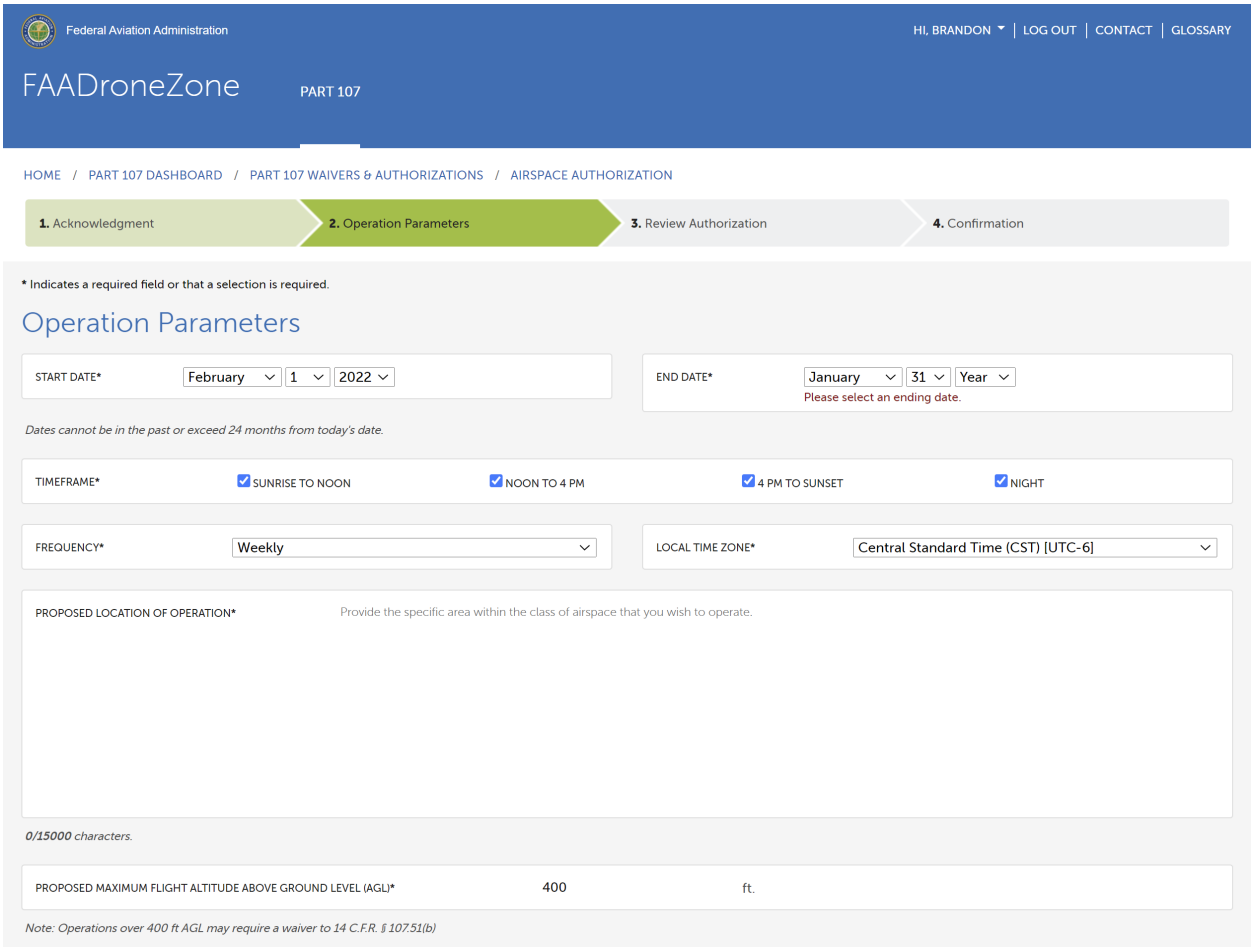
will need to make the adjustments in the account information section.



Copyright © 2021 GCPSURT All Rights Reserved

Operation Parameters

This section is the section that you will define the time frame of your waiver, your operational area, what type of operation you will be conducting, and how you will conduct the operation in a safe manner. Go through each field and select the option that best applies to your operation. Feel free to select the longest end date it will allow.



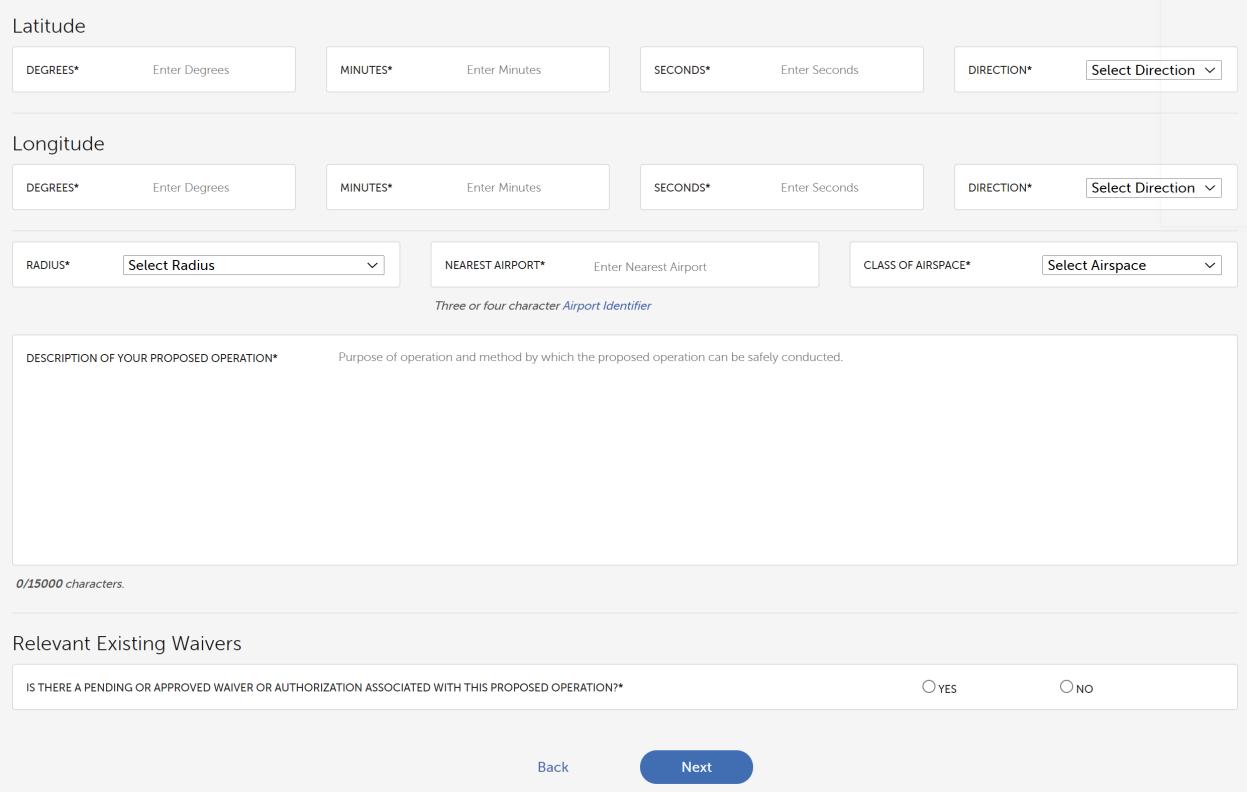
Proposed Location of Operation Narrative:

Request wide area authorization to fly within the entire (Insert your airport name here, example: KHOU) airspace at the highest available altitudes as published by the faa.maps.arcgis.com grid maps. Flights will not be conducted in any areas listed as '0' altitude no-fly zones without coordination and approval of ATC. These operations will be conducted during the day time and night time.

END OF NARRATIVE

Next, fill out the general latitude and longitude information for your operation. If you do not know the lat/long of your area, go to google maps and right click on the general area of where your operation will be. Then click what's here? This will show you the lat/long of the pin drop you just created. Take that information and place it in corresponding fields. You might have to do a decimal to Degrees Minutes Seconds conversion.

Copyright © 2021 GCPSURT All Rights Reserved



Description Of Your Proposed Operation Narrative:

Operations will be conducted for public safety purposes and/or training by the (YOUR AGENCY HERE). These operations may include, but are not limited to: law enforcement, fire/ems, and/or disaster response and recovery purposes. These operations will also include training deployments to better develop best practices for the aforementioned deployments.

During any operation in the controlled airspace the following risk mitigation procedures will be followed:

1)The sUAS will follow established altitude restrictions specific to the location where the operation is taking place. These altitudes will correspond with published facility grid maps found at www.faa.maps.arcgis.com.

2)A trained visual observer will be utilized as required and will maintain effective communication with the remote pilot-in-command. If at anytime the visual observer is unable to maintain visual line of sight, the operation will be immediately terminated and the sUAS will be safely recovered to the ground.

3)The remote pilot-in-command will carry an aviation transceiver radio and monitor appropriate air traffic control frequencies for air traffic in the vicinity of the operational area. This radio will only be used to monitor air traffic control frequencies and will not be used for flight crew communications.

4)The remote pilot-in-command will ensure that the sUAS will yield to all aircraft so as to not create an undue hazard.

Copyright © 2021 GCPSURT All Rights Reserved

5)The sUAS will be equipped with an anti-collision strobe light system at all times during operations in the controlled airspace.

6)The remote pilot-in-command will contact the local air traffic control, if required, by the terms of this authorization to notify them of the operation, time of launch, maximum altitude, operational area, and estimated time of flight operation termination.

7)The UAS will have a pre-programmed lost link return-to-home location established prior to takeoff and will account for any hazards in the airspace of the operational area. This location will be verified to not cause the sUAS to cross into any no-fly zones or violate established altitude restrictions.

8)In the event of any abnormal flight behavior, both the remote pilot-in-command and visual observer will have cellular phones available to contact the air traffic control facility to advise of the issue.

9)The remote pilot-in-command will carry a cellular telephone with the phone number (YOUR NUMBER HERE) for contact by ATC in the event that the authorization requires amendment or cancellation. The remote pilot-in-command will immediately terminate the flight safely if notified by ATC.

10)When able, the sUAS will utilize onboard geofencing to maintain a safe operational area.

11)The remote pilot-in-command will adhere to all applicable regulations found in 14 CFR Part 107 during all flight operations.

12)Flight operations will be filed as a NOTAM advising of the operation when practicable.

13)The takeoff and landing zone will be clearly marked with a high visibility landing pad and cone perimeter.

14)All flight briefings will include safety information specific to the airspace being operated in and location of the flight. All flight crew members will be made familiar with emergency procedures, sUAS flight deviation landing locations, current and forecasted weather, and any other information pertinent to the operation.

16)The responsible person for this authorization, (YOUR NAME HERE), holds an FAA remote pilot certificate (YOUR CERT NUMBER HERE) They will conduct or verify all training with the flight crew regarding flight operations in controlled airspace, communication procedures, weather considerations, and any other requirements pertinent to the flight operation.

Any questions or comments can be directed to uas@pearlandtx.gov, or by phone at (281) 825-2060.

Review and Submit

At this time review all the information you completed in the application. If you have any supporting documents, you will add them at this time. If all the information is correct, submit the application. Typically, the turn around time from submission to approval is roughly 2 weeks to a month.

Copyright © 2021 GCPSURT All Rights Reserved

0’ Grid Authorizations

If you are needing authorization in a 0’ grid in an emergency, you should utilize the SGI process. However, if you anticipate you will be needing access to 0’ grid areas often you can apply for this authorization. The process is the same as the Non-LAANC Activated Airspaces. However, you will need to be more precise in your operational areas and why you will be needing access to the 0’ grid. Also, to operate in a 0’ grid I typically don’t request higher than 50’ AGL. This alleviates a higher level of safety measures and is typically well received by the application reviewers. Finally, gaining access to 0’ grids can be difficult and might require adjustments to your safety case. However, I have not been denied as of yet using this narrative.

Proposed Location of Operation Narrative:

I am requesting airspace authorizations for the 0' airspace grid of (YOUR AIRSPACE HERE) for public safety purposes. See description of operations for specific risk mitigation procedures. All operations will be conducted outside of the airport facility perimeter.

Description Of Your Proposed Operation Narrative:

(YOUR AGENCY HERE) will be conducting operations related to public safety near the (YOUR AIRPORT HERE). Unfortunately, we are not allowed to manually apply for authorization through the FAA Drone Zone in a LAANC enabled airspace outside the one-day limit listed on this form, so we are respectfully requesting this authorization be approved from (BEGINNING DATE) through (ENDING DATE). An altitude geofence will be set to 50' in the (YOUR PILOT APP) or any other application used by the pilot. (DESCRIBE YOUR FLIGHT AREA HERE). A max horizontal distance geofence will be set to a 1500' radius from the center of flight area in the DJI Pilot app or any other application used by the pilot. I have contacted (AIRPORT MANAGER NAME HERE), Airport Manager and have briefed him/her on the request. We will have a dedicated VO who will constantly scan for aircraft. The RPIC and safety officer will monitor the (YOUR AIRPORT NAME HERE) CT frequency on an aviation handheld. The site is small, and the crew communications will be done via handheld radios. The RPIC will brief the flight team prior to launch and go over all safety concerns. The sUAS will have a preprogrammed "return to home" lost link location set prior to launch and the return to home altitude will be set to 50'. In the event of low flying aircraft in the area, the sUAS will immediately descend and land safely. In the event of erratic behavior or a "fly away" type event, the RPIC will immediately notify (YOUR AIRPORT NAME) Tower and give the aircraft position, direction and altitude. The RPIC will be available at (YOUR CELL NUMBER HERE). The takeoff and landing area will be clearly marked with a high visibility landing pad and coned off. Secondary landing areas were identified during a site visit and will be used if needed. All personnel on the scene will be notified prior to those locations. I verify all members of the flight team are trained in their positions and educated in the following areas- flight operations in controlled air space, communication procedures, weather considerations, and emergency procedures.

END

Once you have completed all the fields, review your application and submit. If you are requested to provide any further information, make the necessary adjustments.

Copyright © 2021 GCPSURT All Rights Reserved

Night Operations

LAANC Activated Airspace

Prior to April 21st, 2021 if you were wanting to conduct night operations you were required to have a daylight waivers. With the new night operations regulations, so long as you have taken your initial or recurrent (ALC-677) after April 6th, 2021 you can now conduct night operations in class G airspace without a warrant. You will still need to have lighted anti-collision lighting visible for at least three (3) statute miles that has a flash rate sufficient to avoid a collision.

If you are needing to conduct night operations in controlled airspace, as of May 14, 2021, the process to obtain the authorization will be the following until the fall (Estimated September) of 2021.

If your operation is in a LAANC active airport at or below UASFM maximums, use your preferred LAANC USS (Airmap, Skyward, KittyHawk, UASidekick, etc.) and apply for a standard LAANC approval for the day you want to fly. **Make sure you only apply for daylight hours**. If you try to include the night hours, it will automatically deny the application. If you have a past midnight operation, you will also need to apply for the next day during daylight hours.

You must download FAA 7711-1 (Appendix A) and keep the form with your pilot (electronically or paper copy) along with your LAANC approval. 7711-1 extends your LAANC approval past daylight hours. It extends your LAANC approval to the hours between civil sunset and/or civil sunrise, which includes civil twilight. Daylight LAANC authorization requests that fall under the UASFM limits are real time, and virtually instant.

There is a lot of speculation that after September of 2021, LAANC will accept night operation requests. Until that time or there is new updates, this is the process.

Non-LAANC Active Airspaces

If you want to fly at a non-LAANC active airport, you simply use the Drone Zone portal and electronically apply for a standard 107.41 Airspace Authorization as mentioned above. However, be sure to adjust the hours your operation will be conducted and complete the form as mentioned above.

If you need to apply for flights outside UASFM limits at night, you can use either LAANC or the Drone Zone. As with non-LAANC airports, you need to give ATC as much time as possible to process the request. You can apply for manual LAANC requests (those outside UASFM limits, also called “Further Coordination Requests”) can be requested up to 90 days in advance. As can automated LAANC requests. This may depend on your LAANC Service System provider.

Copyright © 2021 GCPSURT All Rights Reserved

Appendix

Appendix A

FAA Form 7711-1, 14 CFR Part 107
LAANC Night Operations

DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

CERTIFICATE OF WAIVER OR AUTHORIZATION

ISSUED TO
Unmanned aircraft flyers operating in accordance with 14 CFR Part 107 while using the Low Altitude Authorization and Notification Capability (LAANC) as a means of obtaining an operational approval.

This certificate is issued for the operations specifically described hereinafter. No person shall conduct any operation pursuant to the authority of this certificate except in accordance with the standard and special provisions contained in this certificate, and such other requirements of the Federal Aviation Regulations not specifically waived by this certificate.

OPERATIONS AUTHORIZED
This authorization extends the duration of a LAANC issued authorization to allow night time operations for the date indicated on the LAANC authorization. This extension is effective only in conjunction with LAANC issued authorizations at or below the Unmanned Aircraft System Facility Map (UASFM) values. Night time operations that carry over from one calendar day to the next will require separate LAANC authorizations and extensions for each calendar day. Operations must be conducted in accordance with 14 CFR Part 107.29.

LIST OF WAIVED REGULATIONS BY SECTION AND TITLE
N/A

STANDARD PROVISIONS

1. A copy of the application made for this certificate shall be attached and become a part hereof.
2. This certificate shall be presented for inspection upon the request of any authorized representative of the Federal Aviation Administration, or of any State or municipal official charged with the duty of enforcing local laws or regulations.
3. The holder of this certificate shall be responsible for the strict observance of the terms and provisions contained herein.
4. This certificate is nontransferable.

Note-This certificate constitutes a waiver of those Federal rules or regulations specifically referred to above. It does not constitute a waiver of any State law or local ordinance.

SPECIAL PROVISIONS

The Special Provision listed is inclusive and set forth in this authorization.

This certificate for operations authorized by 14 CFR Part 107 is effective from April 21, 2021 through September 30, 2021, and is subject to cancellation at any time upon notice by the Administrator or his/her authorized representative.

BY DIRECTION OF THE ADMINISTRATOR

FAA Headquarters (Region)	George Gonzalez (Signature)
April 16, 2021 (Date)	Manager, Rules and Regulations Group (Title)

FAA Form 7711-1 (7-74)

Copyright © 2021 GCPSURT All Rights Reserved