*San Antonio Police Department*
*Helicopter Detail*

# sUAS Standard Operating Guidelines

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# Introduction

Small Unmanned Aerial Systems (sUAS) technology allied with image processing applications, real-time video, and various sensor payloads offer cost efficient methods to collect crime scene evidence, provide police tactical situation awareness, assist in search and rescue, assist in large scale planned and unplanned events enhance the Department's public safety mission.

This Operational Guideline manual establishes standard guidelines for the use of SUAS by the San Antonio Police Department to collect and disseminate images, video, and data.

I. **Scope**

A. Unmanned Aircraft have many uses to assist in public safety. Although all of the uses cannot be predicted, generally the following missions for which it may be deployed are:

1. Tactical Situations
2. Search and Rescue
3. Major Planned Events
4. Major Disasters
5. Outdoor Crime Scenes
6. Mapping

B. All sUAS missions will be flown in accordance with 14 CFR Parts 61, 91, and 107 as applicable.

II. **Privacy**

A. All sUAS flights shall be compliant with the Texas Privacy Act HB912.

B. A sUAS shall not be intentionally used for the purpose of viewing, recording, or transmitting images and/or video in a criminal investigation at any location or upon any property at which a person has a reasonable expectation of privacy unless:

1. Obtain a Search Warrant
2. Plain View
3. Consent by the owner or person responsible for the property is obtained
4. Exigent circumstances

# Introduction (cont.)

III. **Transparency**

A. To promote transparency relating to Department sUAS activities, the Department shall:

1. Provide reasonable notice to the public regarding where Department sUAS are authorized to operate.

2. Makes reasonable efforts to inform the public about the Department's program as well as changes that would be expected to materially affect privacy, civil rights, or civil liberties; and

3. If requested, a general summary of the Department's sUAS operations during the previous calendar year, to include a brief description of types or categories of missions flown, and the number of times sUAS teams provided aircraft services.

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# Acronyms and Definitions

## I. Acronyms

| | |
|---|---|
| **AGL** | Above Ground Level |
| **ATC** | Air Traffic Control |
| **AHJ** | Authority Having Jurisdiction |
| **BVLOS** | Beyond Visual Line of Sight |
| **CFR** | Code of Federal Regulation |
| **CRM** | Crew Resource Management |
| **CS** | Control Station |
| **FAA** | Federal Aviation Administration |
| **GPS** | Global Positioning System |
| **ILA** | Inter-Local Agreement |
| **LZ** | Landing Zone |
| **NAS** | National Airspace System |
| **NOTAM** | Notice To Airmen |
| **NTSB** | National Transportation Safety Board |
| **OPAREA** | Operational Area |
| **PIC** | Pilot In Command |
| **RPIC** | Remote Pilot In Command |
| **TFR** | Temporary Flight Restriction |
| **TRACON** | Terminal Radar Approach Control Facility |
| **sUAS** | Small Unmanned Aerial System |
| **VFR** | Visual Flight Rules |
| **VLOS** | Visual Line of Sight |
| **VO** | Visual Observer |

## II. Definitions

A. In addition to the acronyms defined above and the terms defined elsewhere in these Operational Guidelines, the following definitions shall apply:

1. **Authority Having Jurisdiction**. An organization, office, or individual responsible for enforcing requirements of a code or standard, or for approving equipment, materials, or a procedure.

2. **Certificate of Authorization (COA)**. An authorization issued by the Air Traffic Organization of the federal Aviation Administration to a public operator for a specific unmanned aerial activity.

3. **Civil Twilight.** The time periods between approximately 30 minutes before sunrise until sunrise, and between sunset and approximately 30 minutes after sunset.

4. **Controlled Airspace**. A generic term that covers the different classifications of airspace (Class A, B, C, D and E airspace) and defined dimensions within which ATC services is provided.

5. **Corrective lenses**. Spectacles or contact lenses.
6. **Crew Resource Management (CRM).** A process designed to aid in the prevention of aviation accidents and incidents by improving performance through an understanding of human factor

concepts, which focuses on interpersonal communication, leadership and decision making by the flight crew.

7. **Defined Incident Perimeter (DIP).** A defined perimeter to be documented based on the scope of the operation and applicable FAA requirements.

8. **First Person View (FPV).** A method used to control a radio-controlled aircraft from the pilot's view point via an onboard camera, fed wirelessly to video goggles or a video monitor.

9. **Night.** The time 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.

10. **Nonparticipant.** Any person not associated with the UA flight mission, including the public, spectators and media.

11. **Crew Leader.** Any person representing a UAS team/group from a participating agency in the regional sUAS program.

12. **Person Manipulating the Controls.** A person other than the remote pilot in command (PIC) who is controlling the flight of a sUAS under the supervision of the remote PIC.

13. **Remote Pilot in Command (Remote PIC or Remote Pilot).** A person who holds a remote pilot certificate with a sUAS rating and has the final authority and responsibility for the operation and safety of an SUAS operation conducted under part 107.

14. **Unmanned Aircraft (UA).** An unmanned aircraft weighing less than 55 pounds, including everything that is onboard or otherwise attached to the aircraft that can be flown without the possibility of direct human intervention from within or on the aircraft.

15. **Small Unmanned Aircraft System (sUAS).** A small UA and its associated elements (including communication links and the components that control the small UA) that are required for the safe and efficient operation of the small UA in the NAS.

16. **Vision Aides.** Binoculars, night vision devices, etc., used only for augmentation of visual observation duties.

17. **Visual Flight Rules (VFR).** VFR are a set of regulations under which a pilot operates an aircraft in weather conditions generally clear enough to allow the pilot to see where the aircraft is going and any other aircraft in the vicinity. For LCUAS Team purposes, VFR requires a 3 statute mile visibility with operations conducted at least 500 feet below any clouds.

18. **Visual Line of Sight (VLOS):** At all times the UA must remain close enough to the PIC and the person manipulating the flight controls of the UA for those people to be capable of seeing the aircraft with vision unaided by any device other than corrective lenses.

19. **Visual Observer (VO).** A person acting as a flight crew member who assists the small UA remote PIC and the person manipulating the controls to see and avoid other air traffic or objects aloft or on the ground

# Guideline 100.01
## *Team Organization*

I. **Overview**

A. sUAS may be comprised of any of the following flight crew members but are not limited to: a UAS Module Leader, LZ Manager, UAS Supervisor, UAS Strike Team / Task Force Leader, Remote Pilot in Command, Visual Observer, and other members who assist in the safe operation and maintenance of the sUAS services.

B. San Antonio Police UAS flight crews may be requested for mutual aid missions by other governmental agencies.

C. The San Antonio Police Department is responsible for the selection and training of its crew members.

**II. UAS Manager**

A. The UAS Manager is a supervisor assigned to the Helicopter Detail who oversees all Department UAS operations and Department UAS training. The UAS Manager also serves as a conduit between UAS vendors and an Incident Management Team. The UAS Manager Coordinates vendor UAS mission with operations, air operations, and planning personnel. Functions as a UAS Module/Team Leader: A typical UAS Module consists of at least one remote pilot, one visual observer, one Module/Team Leader and possible a LZ Manager.

B. The UAS Manager responsibilities include, but ae not limited to:

1. Ensuring the department's flight crews completed all FAA requirements.
2. Maintaining a current list of Department certified crew members.
3. Establishes and develops recommendations for UAS operations and training.
4. Monitoring the condition, maintenance and flight records of the Department's UAS and associated equipment.
5. Performing monthly FAA reports and records management duties.
6. Maintaining Department flight Waivers and COAs
7. Receives mission assignments and forwards to the pilots or LZ Manager in the field.
8. Manage takeoff/landing zones anytime there are three or more aircraft operating in the same airspace if an LZ Manager is not on scene.
9. Responsible for safe UAS operations to include airspace management.

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# Guideline 100.01
*Team Organization cont.*

**II. UAS Remote Pilot / Pilot –in-Command (PIC)**

A. The qualified position supports operations by providing real-time situational awareness in the form of electro-optical (daylight) or infrared video/still images. Collects imagery and telemetry which can be processed into precise planning documents such as geo-referenced maps, orthomosaic photos, digital elevation models, or 3D terrain models.

B. A PIC is the department member who has final authority and responsibility for the operation and safety of the flight, has been designated as PIC before or during the flight, and holds the appropriate category, class, and type rating, if appropriate, for the conduct of the flight.

C. The responsibility and authority of a PIC is described by FAR 14 CFR 91.3

D. The PIC position may rotate duties as necessary with equally qualified pilots and the agency member designated as PIC may change during flight; provided that a PIC must be designated at all times.

**III. Visual Observer (VO)**

A. A Visual Observer is a person acting as a flight crew member who assists the PIC and the person manipulating the flight controls to see and avoid other air traffic or objects aloft or on the ground.

**IV. Specialist**

A. A specialist will function as a UAS team member who will be responsible for specific tasks that are directly operating the UAS but support a specific mission objective.

**V. UAS LZ Manager**

A. Is in charge of the landing zone. LZ Manager is a required position anytime there are three or more aircraft flying from the same landing/takeoff zone.

B. It is the job of the LZ Manager to coordinate altitude separation between aircraft with the pilots and manage air traffic landing and takeoff operations.

C. The LZ Manager will receive mission assignments and assign those missions to the appropriate pilots.

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# Guideline 100.02
## *Airspace Authority*

### I. Authority Identification

A. UAS Team may choose to operate under the Small UAS Rule, 14 CFR Part 107 ("Part 107"), or conduct public aircraft operations under a jurisdictional COA.

B. The PIC will determine the appropriate airspace authority for each flight operation based on the type of airspace, time of day, and any other pertinent circumstances.

C. The PIC, VO, and crewmembers will follow the rules of the chosen airspace authority, including any approved waivers, for each operation.

### II. Controlled Airspace

A. Operations in Class B, Class C, or Class D airspace, or within the lateral boundaries of surface Class E airspace designated for an airport, the PIC must review the UASFM before each flight at http://uas-faa.opendata.arcgis.com/, open the "Visualize It" section and reference the intended area of operation. If the UAS operation will be conducted at or below an altitude as published on the UASFM, the UAS must operate contiguously within those grid squares.

B. If the required operating altitude is not in accordance with the published UASFM, or a UASFM map in an area of controlled airspace is not available-requests to operate in an area outside the approved operating area should be limited to emergency/life threatening operations. Coordinate these flights through the Special Government Interest (SGI) process by calling the SOSC at (202) 267-8276, or email: 9-ATOR-HQ-SOSC@faa.gov.

C. When operating in controlled airspace, the PIC must be aware of all traffic patterns and approach corridors to runways and landing areas.

D. The PIC must avoid operating anywhere that the presence of the UAS may interfere with the operations at the airport, such as approach corridors, taxiways, runways, or helipads.

E. The PIC must yield right-of-way to all other aircraft, including aircraft operating on the surface of the airport.

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# Guideline 100.03
## *Flight Crew Qualifications*

### I. PIC Qualifications

A. All pilots who will be flying Department missions shall be properly trained by instructors as designated by the Department. The UAS pilots will meet all conditions of the (COA) issued by the FAA. The pilots will have a current working knowledge of the airspace intended for operations, specific UAS aerodynamic factors, and the ability to obtain and interpret weather. All pilots must meet the following flight experience requirements and be current with their flight log entries. The minimum training and certification requirements for a PIC are as follows:

1. Basic Flight Operations Training. All pilots must successfully complete and pass the 40-hour Basic Flight Operations Training/Curriculum for UAS as approved by the Department. Pilots must obtain their Remote 107 Pilot Certificate with a UAS rating issued by the FAA.

2. Mission Training. All pilots must undergo Mission Training to increase specific core competencies in all UAS operations, systems and roles. This training is in addition to Basic Flight Operations Training.

3. Valid driver's license.

### II. Proficiency

A. All members within the UAS flight crew shall read the current COA and maintain proficiency in their operator/observer abilities.

B. The PIC must pass a recurrent aeronautical knowledge test within 24 calendar months of passing either an initial or other recurrent aeronautical knowledge test.

C. Recurrent training is not limited to actual pilot/observer skills, but includes knowledge of all pertinent UAS and aviation matters.

C. At a minimum, the PIC must have attended two UAS trainings and conducted three takeoffs (launch) and three landings (recovery), and a minimum flight time of 30 minutes with the specific UAS aircraft type within the previous 90 days prior to flying an operational mission. Members who do not have documented training or flight time for the preceding 90 days shall demonstrate proficiency before performing pilot/observer duties during a mission.

D. Failure to maintain/prove proficiency can result in removal from UAS operations.

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# Guideline 100.03
*Flight Crew Qualifications cont.*

**III. VO Qualifications**

A. Completion of a training course for the safe flight of aircraft, including the responsibilities described in 14 CFR Part 91 §91.111, §91.113 and §91.115, regarding cloud clearance, flight visibility, and the pilot controller glossary, including standard ATC phraseology and communication.

B. Valid driver license.

**IV. Crew Resource Management**

A. The UAS Program Manager will confirm that CRM training is current for all participating crewmembers before flying operational or training missions.

B. The CRM training must consist of initial training, as well as CRM recurrent training during every recurrent training cycle, not to exceed a 12-month interval between initial training and recurrent training or between subsequent recurrent training sessions.

**V. Restrictions**

A. No person may serve as a PIC, person manipulating the controls, VO or other crew member if he or she:

1. Consumed any alcoholic beverage within the preceding 8 hours.

2. Is under the influence of intoxicants.

3. Has a blood alcohol concentration of 0.04 percent or greater; and/or

4. Is using a drug, whether prescription, over-the-counter, recreational, or illegal that affects the person's ability to safely operate the aircraft and/or participate in the sUAS operational mission.

B. It is the responsibility of the PIC, person manipulating the controls, VO, or other crew member to determine whether he/she is unable to participate in a UAS operation. However, the UAS Manager and/or Incident Commander of the incident for which UAS services are provided, may require the PIC, person manipulating the controls, VO, or other crewmember to cease participation in a sUAS operation if he/she has a reasonable suspicion that such person may be prohibited from participation.

C. No PIC or VO may participate in UAS activities that exceed 16 continuous operation hours in a 24-hour period.

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# Guideline 100.04
## *Aircraft Airworthiness and Maintenance*

### I. Airworthiness Certification

A. The UAS Program Manager is responsible for determining that the unmanned aircraft used by its pilots are airworthy.

B. All unmanned aircraft must be operated in strict compliance with all provisions and conditions contained in the Airworthiness Safety Release, including all documents and provisions referenced in any applicable COA applications and/or Part 107 waivers.

### II. Maintenance

A. The UAS Program Manager is responsible for the maintenance of all sUAS owned by the Police. Any sUAS owned by other city departments will have a designated member to perform aircraft maintenance.

B. sUAS maintenance includes scheduled and unscheduled overhaul, repair, inspection, modification, replacement, and system software upgrades of the sUAS and its components necessary for flight.

### III. Configuration Control

A. A configuration control program must be in place for hardware and/or software changes made to the UAS to ensure continued airworthiness.

B. Software changes to the aircraft and control station as well as hardware system changes are classified as major changes that must be documented as part of the normal maintenance procedures.

C. Each aircraft that has a major change in software or hardware configuration must be test flown on a test range to confirm the airworthiness of the sUAS.

### IV. Preflight Inspection

A. Before each flight, the PIC must inspect the sUAS to ensure that it is in a condition for safe operation, such as inspecting for equipment damage or malfunction(s).

B. The preflight inspection should include a visual or functional check of the following items, as applicable:

1. Visual condition inspection of the UAS components;

2. Airframe structure, all flight control surfaces, and linkages;

3. Registration markings, for proper display and legibility;

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## Guideline 100.04
*Aircraft Airworthiness and Maintenance cont.*

4. Follow the manufacturer checklist for the sUAS in use.

5. Ensure the pilot interface system is connected, properly connected, and is functional.

6. Verify all systems (e.g., aircraft and control unit) have an adequate energy supply for the intended operation and are functioning properly;

7. Calibrate UAS prior to any flight;

8. Verify communications with sUAS and that the sUAS has acquired GPS location from at least 4 satellites

9. Check that any equipment, such as a camera, is securely attached;

10. At a controlled altitude, fly within range of any interference and recheck all controls and stability.

### V. Maintenance Records

A. The Department shall keep documentation of any maintenance, repair, modification, overhaul, or replacement of a system component for each sUAS.

B. The Department should keep record of time-in-service for sUAS components (e.g., airframe, batteries, etc.) at the time of maintenance, repair, modification, overhaul, or replacement procedure(s).

C. Maintenance records will be retrievable from either hardcopy and/or electronic logbook format for future reference.

### VI. Payload Restrictions

A. Any payload attached must be shown not to adversely affect the flight characteristics or controllability of the aircraft.

B. No sUAS may carry hazardous materials.

C. No sUAS may carry weapons.

### VII. Storage

A. The UAS Program Manager shall store the aircraft in a controlled environment in accordance with manufacturer recommendations.

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# Guideline 100.05
## *Incident/Accident/Mishap Reporting*

**I. FAA Reporting Criteria**

A. All accidents/mishaps involving UAS operations, where any of the following occur, shall be reported to the FAA:

1. Fatal injury, where the operations of a UAS results in a death occurring within 30 days of the accident/mishap;

2. Serious injury, where the operation of a UAS results in a hospitalization of more than 48 hours, the fracture of any bone (except for simple fractures of fingers, toes, or nose), severe hemorrhage or tissue damage, internal injuries, or second or third degree burns;

3. Total unmanned aircraft loss

4. Substantial damage to the UAS where there is damage to the airframe, power plant, or onboard systems that must be repaired prior to further flight. Damage to property, other than the unmanned aircraft greater than $500.

B. When operating under a COA, any incident/mishap that results in an unsafe/abnormal operation shall be reported to the FAA including, but not limited to:

1. A malfunction or failure of the unmanned aircraft's on-board flight control system (including navigation);

2. A malfunction or failure of the ground control station flight control hardware or software (other than loss of control link);

3. A power plant failure or malfunction; in-flight fire, or aircraft collision;

4. Any in-flight failure of the unmanned aircraft's electrical system requiring use of alternate or emergency power to complete the flight;

5. A deviation from any provisions contained in the COA;

6. A deviation from an ATC clearance and/or Letter(s) of Agreement/Procedures;

C. A lost control link event resulting in a fly-away or execution of a preplanned/unplanned lost link procedure.

D. All incidents or accidents are required to be reported to the FAA within 10 days, unless such incident or accident occurs while operating under a COA, which must be reported as soon as reasonable practicable and before any additional flights occur.

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## Guideline 100.05
*Incident/Accident/Mishap Reporting cont.*

**II. FAA Report Submission**

A. Any incident or accident that occurs while operating under a COA can be reported to the FAA via the CAPS On-Line Accident/Incident Report and initially reported via email at: 1. 9-AJV-115-UASOrganization@faa.gov

B. All other incident/accident reports may be submitted to the FAA Regional Operations Center by phone at 817-222-5006 or electronically at http://www.faa.gov/about/office_org/field_offices/fsdo/.

**II. NTSB Reporting Criteria**

A. All accidents/mishaps involving UAS operations, where any of the following occur, shall be reported to the NTSB in compliance with 49 CFR §830.2:

1. Any person suffers death or serious injury;
2. Flight control system malfunction or failure such as a fly-away;
3. Inflight fire
4. Aircraft collision in flight;
5. More than $25,000 damage to objects other than the aircraft;
6. Release of all or a portion of a propeller blade from an aircraft, excluding release caused solely by ground contact.

B. All incidents or accidents are required to be reported to the NTSB as soon as reasonably practicable and before any additional flights occur.

C. All incident/accident reports may be reported to the NTSB's Response Operations Center at 844-373-9922

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# Guideline 100.06
## *Digital Media Evidence*

**I. Recording Digital Images**

A. The use of personal digital photographic equipment by members for evidentiary photographs is prohibited.

B. Members will not manipulate photographs. Approved software used to format images to create maps and crimes scene models are authorized.

C. At the completing of the incident or event, the media card will be uploaded as soon as possible and no later than the end of the member's tour of duty.

D. No images will be deleted from the media card(s) prior to upload.

E. The images will only be viewed at the time of recording to determine that the necessary images are being recorded correctly. At no time will the media card be removed and viewed from a card reader.

F. Digital Evidentiary photographs shall not be copied, printed, or used for personal or non-departmental use.

**II. Uploading and Submission of Images**

A. Images will only be uploaded at approved department upload stations.

B. The image will be uploaded to a single-write media, and sent to the Photo Services Lab for image storage. This single-write media becomes the original.

C. The media will be marked as "Master"

D. The media will be legibly labeled with Incident number or CFS, date and time images uploaded, photographer/pilot's name and badge number, and the person's name and badge number if different from the photographer/pilot.

E. A working copy may be uploaded to a Department Server to make available to the applicable follow-up unit.

F. Once the upload is determined to be successful, the media will be formatted and returned to service.

G. In the event an upload cannot be made, the media card will be submitted to the Photo Services Lab.

H. Members will prepare SAPD Form #85-1 for each form of media submitted to the Photo Services Lab. The media and Form #85-1 will be placed in a disk sleeve, envelope, or case. Media and Form #85-1 will be placed in the Photo Services Lab drop box located at the substations.

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# Guideline 200.01
## *Flight Planning and Operations*

### I. Launch and Recovery

A. A NOTAM shall be issued whenever flight operations are scheduled or required as by Department issued COA or Part 107 Waiver.

B. A NOTAM may be accomplished by contacting the NOTAM Flight Service Station at (1-877-487-6867) or https://www.1800wxbrief.com/Website/#!/ not more than 72 hours in advance, but not less than 48 hours prior to the operation, unless otherwise authorized as a special provision.

C. The PIC must conduct an assessment of the operating environment.

D. The PIC must conduct a pre-takeoff briefing as applicable prior to each launch.

E. The PIC must ensure there is sufficient power for the sUAS to continue controlled flight operations to a normal landing.

F. No crewmember may perform any duties during a critical phase of flight not required for the safe operation of the aircraft.

G. The pilot and/or the PIC must not engage in any activity not directly related to the operations of the aircraft.

H. The use of cell phones or other electronic devices by crew members is restricted to communications pertinent to the operational control of the sUAS and any required communications with ATC.

I. Prior to take off the UAS will be programed to allow it to return to home if the signal is lost from the transmitter.

J. When the UAS is deployed to meet an approved mission task, it shall be recovered within the same general area if possible.

K. A designated safe area of at least 25 feet shall be maintained during lift off between UAS's and personnel.

L. UAS's should not be flown within unsafe distances to any object or person

### II. Weather

A. The PIC shall verify the weather conditions in the immediate area of operations. A local source of weather may be utilized, the internet, phone application or may be observed on site. The UAS will not be flown outside the weather minimums identified by the manufacture or the approved Certificate of Waiver/Authorization (COA) by the FAA. The PIC shall have final determination of risk due to weather

and authority over any mission.

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## Guideline 200.01
*Flight Planning and Operations cont.*

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| **II.** | **Hazards to the Public** |
| | |
| A. | The PIC shall make every effort to ensure that flight operations will not pose any undue risk to the public not directly involved with the effort. The PIC shall have final determination of risk to the public and authority over any launch of his/her own aircraft. In all cases, the UAS will not be flown over persons that is in violation of the FAA approved COA. |
| | |
| **II.** | **Hazards to property** |
| | |
| A. | The PIC shall make every effort to ensure that flight operations will not pose any undue risk to any property in the area involved with the effort. The PIC shall have final determination of risk to the property and authority over launch of his/her own aircraft. In all cases, the UAS will not be flow over property that is in violation of the FAA approved COA. |
| | |
| **II.** | **Hazards to Personnel** |
| | |
| A. | The PIC shall make every effort to ensure that flight operations will not pose any undue risk to the personnel directly involved with the effort. The PIC shall have final determination of risk to the public and authority over any launch of his/her aircraft. |
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| **III.** | **Proximity to Controlled Airspace** |
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| A. | Operations inside any controlled airspace B, C,D shall only be performed in compliance with the LAANC system. Should an operation fall outside the boundaries defined in the grid map, the PIC is responsible for coordinating with the responsible ATC facility. |
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## Guideline 200.02
***Emergency Procedures***

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| **I.** | **Lost Link / GPS Procedures** | |
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| | A. | Lost link is an interruption or loss of the control link between the control station and the unmanned aircraft, preventing control of the aircraft resulting in the UAS performing pre-set lost link procedures such as the following: |
| | | |
| | 1. | In the event of a lost link while operating in controlled airspace, which cannot be re- established within 10 seconds, a designated crewmember will immediately notify the appropriate ATC. |
| | | |
| | B. | When possible, lost link and lost GPS procedures should comply with the following: |
| | | |
| | 1. | The aircraft autopilot will enter a lost link mode within 10 seconds of the lost link condition being detected, return to the LZ or other defined lost link waypoint within the sUAS OP AREA, and land. |
| | | |
| | 2. | If the aircraft loses GPS, the PIC should immediately attempt to land the aircraft in a safe location by controlling it manually or landing at the current location within the OP AREA. |
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| | 3. | If both GPS and data link are lost, the aircraft must automatically land at the current position. |
| | | |
| | 4. | The UAS lost link mission should avoid transit or orbit over populated areas. |
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| **II.** | **Emergency or Fly-Away Procedures** | |
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| | A. | In the event of a fly-away or other emergency scenario while operating in controlled airspace, designated crew member will immediately notify ATC or nearest controlling facility. |
| | | |
| | B. | The crewmember will state PIC intentions, and provide the following: |
| | | |
| | | 1. The nature of the emergency |
| | | |
| | | 2. Last known UAS position, altitude, and direction of flight, and maximum remaining flight time. |
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| **III.** | **Lost Sight** | |
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| | A. | If a VO loses sight of the UAS, the VO will notify the PIC immediately. |
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| | B. | If the UAS is visually reacquired promptly, the mission may be continued. If not, the PIC must immediately abort the flight and land the UAS. |
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| **IV.** | **Lost Communications** | |
| | | |
| | A. | The PIC must land the UAS if communication with the VO is lost and the PIC cannot gain VLOS. |
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