



# UAS Ready Reference Guide

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Federal Aviation  
Administration

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## ACRONYM LIST

Acronym	Definition
AAP	Airspace Access Program
ADS-B	Automatic Dependent Surveillance – Broadcast
AGL	Above Ground Level
API	Application Programming Interface
ARC	Aviation Rulemaking Committee
ARP	Airport Reference Point
ASRP	Aviation Safety Reporting Program
ASRS	Aviation Safety Reporting System
ATC	Air Traffic Control
ATSC	Air Traffic Security Coordinator
BVLOS	Beyond Visual Line of Sight
C-UAS	Counter Unmanned Aircraft System
CAPS	COA Application Processing System
CBO	Community-Based Organization
CEDAR	Comprehensive Electronic Data Analysis and Reporting
CFR	Code of Federal Regulations
COA	Certificate of Waiver or Authorization
d-CS	Digital-Chart Supplement
DEN	Domestic Events Network
DHS	Department of Homeland Security
DOD	Department of Defense
DOE	Department of Energy
DOJ	Department of Justice
FRIA	FAA-Recognized Identification Area
FSDO	FAA Flight Standards District Office
GCS	Ground Control Station
GIS	Geographic Information System
ID	Identification
IFR	Instrument Flight Rules
IPP	Integration Pilot Program
JATOC	Joint Air Traffic Operations Command
JROTC	Junior Reserve Officer Training Corps
LAANC	Low Altitude Authorization and Notification Capability
LEAP	Law Enforcement Assistance Program
LOA	Letter of Agreement
MOA	Memorandum of Agreement

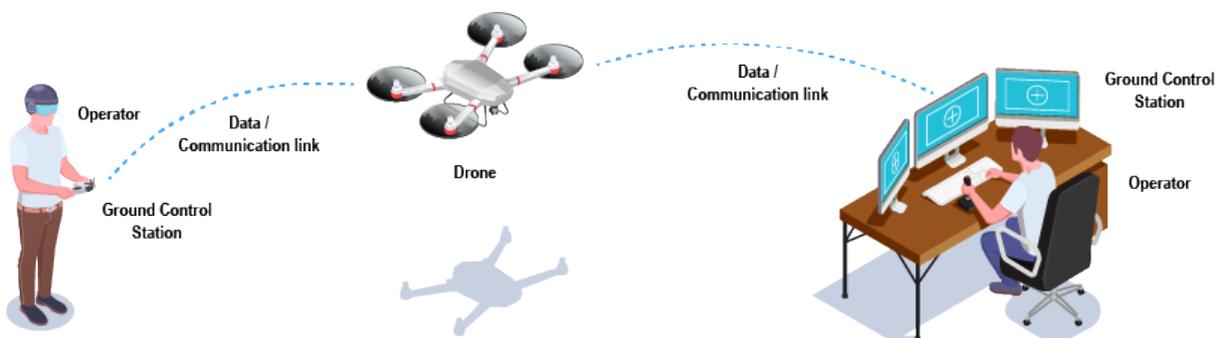
Acronym	Definition
MOR	Mandatory Occurrence Report
MOU	Memorandum of Understanding
NAS	National Airspace System
NASA	National Aeronautics and Space Administration
NM	Nautical Miles
NOTAM	Notice to Air Mission
NTSB	National Transportation Safety Board
ODO	Opposite Direction Operations
RAIS	Remote Airport Information Service
RPIC	Remote Pilot in Command
SAA	Special Activity Airspace
SFRA	Special Flight Rules Area
SGI	Special Governmental Interest
SOSC	System Operations Support Center
SUA	Special Use Airspace
sUAS	Small Unmanned Aircraft System
TBVLOS	Tactical Beyond Visual Line of Sight
TFR	Temporary Flight Restriction
TRUST	The Recreational UAS Safety Test
TSA	Transportation Security Administration
UA	Unmanned Aircraft
UAG	Unmanned Aircraft General - Small
UAS	Unmanned Aircraft System
UASFM	UAS Facility Map
UAV	Unmanned Aerial Vehicle
UDDS	UAS Data Delivery System
UPS	United Parcel Service
USC	United States Code
USS	UAS Service Supplier
VFR	Visual Flight Rules
VLOS	Visual Line of Sight

## 1.0 UNMANNED AIRCRAFT SYSTEM (UAS) OVERVIEW

### 1.1 UAS DESCRIPTION

- A **drone** is an **Unmanned Aerial Vehicle (UAV)** which refers to an aircraft that is not piloted from within the aircraft. A drone can have either fixed wings or a single or multiple rotors for flight.
- An **Unmanned Aircraft System (UAS)** is the entire system inclusive of all components (i.e., ground control station) that allow the drone to function.
- A **Ground Control Station (GCS)** is a hardware and software unit that supports the communication with and control of the drone.
- An **operator** is the **Remote Pilot in Command (RPIC)** or the person manipulating the flight control. The operator uses the GCS to control flight, monitor status, support mission planning, and communicate using a data link.

FAA UAS Contact	
	844-FLY-MY-UA
	UASHelp@faa.gov
	<a href="http://www.faa.gov/uas/contact_us">www.faa.gov/uas/contact_us</a>



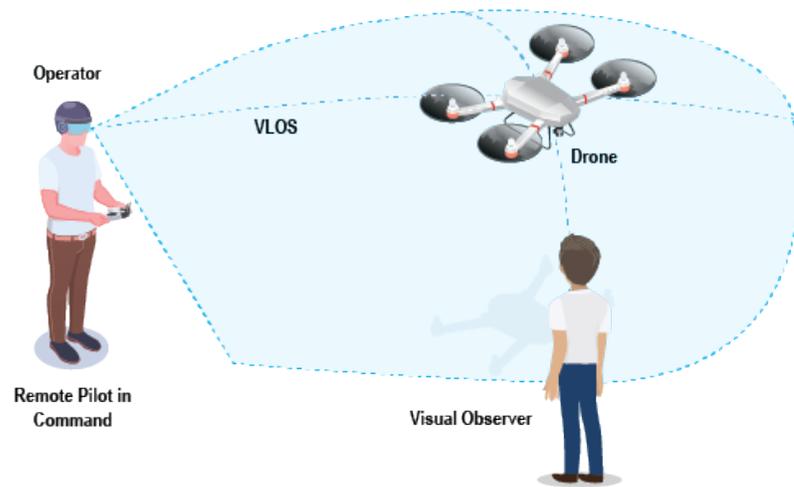
### 1.2 VISUAL LINE OF SIGHT (VLOS)

For many types of UAS operations, the operator or visual observer must have eyes on the aircraft at all times to ensure it is not a collision hazard to other aircraft or people on the ground. The RPIC, visual observer (if one is used), and the person manipulating the flight control of the UAS must be able to see the **Unmanned Aircraft (UA)** throughout the entire flight in order to:

- Know the UA's location;
- Determine the UA's attitude, altitude, and direction of flight;
- Observe the airspace for other air traffic or hazards; and
- Determine that the UA does not endanger the life or property of another.

## 1.3 REMOTE IDENTIFICATION (ID)

**Remote Identification (ID)** is the ability of a drone in flight to provide identification and location information that can be received by other parties. Remote ID helps the FAA, law enforcement, and other federal agencies find the control station when a drone appears to be flying in an unsafe manner or where it is not allowed to fly. All drone pilots required to register their UAS must operate their aircraft in accordance with the final rule on remote ID beginning September 16, 2023.



Operators can comply with the remote ID rule in three ways:

1. Operate a standard remote ID drone that was produced with remote ID broadcast capabilities and provides identification and location information about the drone and its control station in accordance with the rule.
2. Operate a drone with a remote ID broadcast module that was retrofitted to the drone to provide remote ID capabilities in accordance with the rule.

Operate (without remote ID equipment) at [FAA-Recognized Identification Areas \(FRIAs\)](#).

### Definitions

**Small Unmanned Aircraft (small UA)** means an unmanned aircraft weighing less than 55 lbs. on takeoff, including everything that is on board or otherwise attached to the aircraft.

**Small Unmanned Aircraft System (sUAS)** means a small unmanned aircraft and its associated elements (including communication links and the components that control the small unmanned aircraft) that are required for the safe and efficient operation of the small unmanned aircraft in the national airspace system.

**Unmanned Aircraft (UA)** means an aircraft operated without the possibility of direct human intervention from within or on the aircraft.

**Visual observer** means a person who is designated by the RPIC to assist the RPIC and the person manipulating the flight controls of the sUAS to see and avoid other air traffic or objects aloft or on the ground.

## 2.0 UAS AIRSPACE RESTRICTIONS

UAS operators must adhere to various airspace restrictions for safety and security reasons. No person may operate a UAV in Class B, C, or D airspace or within the lateral boundaries of the surface area of Class E airspace designated for an airport unless that person has prior authorization from Air Traffic Control (ATC).

### 2.1 STADIUMS AND SPORTING EVENTS

- Flying drones in and around stadiums is prohibited starting one hour before and ending one hour after the scheduled time of any of the following events:
  - Major League Baseball
  - National Football League
  - NCAA Division One Football
  - NASCAR Sprint Cup, Indy Car, and Champ Series races
- UAS operations are prohibited within a radius of 3 Nautical Miles (NM) of the stadium or venue.

### 2.2 NEAR AIRPORTS

- For UAS operations near airports in controlled airspace, operators must receive an airspace authorization prior to operation.
- For UAS operations near airports in uncontrolled airspace that remain under 400 ft. Above Ground Level (AGL), prior authorization is not required. When flying in these areas, remote pilots and recreational flyers must be aware of and avoid traffic patterns and takeoff and landing areas. A UAV must not interfere with operations at the airport and must yield right-of-way to all other aircraft.

### 2.3 SECURITY SENSITIVE AIRSPACE RESTRICTIONS

- Drones are prohibited from flying over designated national security sensitive facilities. This includes 1,500+ restrictions over sensitive federal locations, including military sites, national landmarks, critical infrastructure, and other sites.
- Interactive maps with a list of sites and their federal points of contact are available at the [UAS Data Delivery System \(UDDS\)](#) (see Section 11.3, UDDS).
- Existing restricted airspace remains in effect.

### 2.4 RESTRICTED OR SPECIAL USE AIRSPACE

- Restricted or "special use" airspace is for certain areas where UAVs and other aircraft are not permitted to fly without special permission. This includes:
  - Prohibited areas—Airspace where aircraft flight, including UAVs, is prohibited. The dimensions of each prohibited area are defined in both area and altitude.
  - Restricted areas—Operations are hazardous to the operator and/or UAV in the designated vicinity.
  - Temporary Flight Restrictions (TFRs)—Certain airspace where travel is limited due to temporary hazardous conditions (e.g., wildfire, hurricane, chemical spill), security-related events, and other special situations.

## 2.5 EMERGENCY AND RESCUE OPERATIONS

Operators without a **Special Governmental Interest (SGI)/Certificates of Waiver or Authorization (COA)** are not permitted to fly UA over areas with emergency and rescue operations, whether or not a TFR is in place. This includes near or over wildfires.

## 2.6 WASHINGTON, DC

The National Capital Region is governed by a Special Flight Rules Area (SFRA) within a 30-mile radius of Ronald Reagan Washington National Airport, which restricts all flights in the greater DC area. The SFRA is a 13–15-mile radius inner ring and a 30-mile radius outer ring with cutouts.

- Flying an UA within the inner ring is prohibited without specific FAA authorization.
- Experienced Part 107 and public aircraft operators with justification can file your request through the online Airspace Access Program (AAP).
- A Transportation Security Administration (TSA)/FAA waiver and an SGI/COA is required.
- Flying a drone for recreational or non-recreational use between 15 and 30 miles from Washington, DC is allowed under these operating conditions:
  - Aircraft must weigh less than 55 lbs. (including any attachments such as a camera)
  - Aircraft must be registered and marked
  - Fly below 400 ft.
  - Fly within Visual Line of Sight (VLOS)
  - Fly in clear weather conditions
  - Never fly near other aircraft

## 2.7 OPERATIONS OVER OPEN-AIR ASSEMBLIES OF PEOPLE

The *Operations Over People* rule became effective on April 21, 2021. Drone pilots operating under Part 107 may fly over people and moving vehicles without a waiver as long as they meet the requirements defined in the rule. In general, remote pilots are prohibited from operating a small UA in sustained flight over open-air assemblies; however, this prohibition is subject to waiver.

An **open-air assembly** is generally understood as dense gatherings of people in the open, usually associated with concert venues, sporting events, parks, and beaches during certain events. Such assemblies are usually associated with public spaces. Whether an open-air assembly exists depends on a case-by-case determination based on the facts and circumstances of each considered an open-air assembly prior to conducting flight operations.

Resources	
	<a href="http://www.faa.gov/uas/recreational_fliers/where_can_i_fly/airspace_restrictions/">www.faa.gov/uas/recreational_fliers/where_can_i_fly/airspace_restrictions/</a>
	<a href="http://www.faa.gov/uas/critical_infrastructure/">www.faa.gov/uas/critical_infrastructure/</a>
	<a href="https://waivers.faa.gov">https://waivers.faa.gov</a>
	<a href="http://B4UFLY.kittyhawk.io">B4UFLY.kittyhawk.io</a>
	<a href="https://faadronezone.faa.gov/">https://faadronezone.faa.gov/</a>
	<a href="http://faa.maps.arcgis.com">faa.maps.arcgis.com</a>
	<a href="http://www.faa.gov/uas/commercial_operators/operations_over_people/">www.faa.gov/uas/commercial_operators/operations_over_people/</a>
	AC 107-2

### 3.0 TYPES OF UAS OPERATIONS—OVERVIEW

The following table may be used as a quick reference guide regarding the types of UAS operations and the corresponding requirements. It is not inclusive of all restrictions or limitations. For interpretations or questions contact the UAS Help Desk.

Operation & Policy	Aircraft Requirements <sup>1</sup>	Pilot Requirements	Airspace Requirements	Examples
<b>Recreational</b> 49 U.S.C §44809 AC 91-57B	Registered in accordance with Part 48 and externally marked  No limitations on size or weight	Pass an aeronautical knowledge and safety test  VLOS	Class G 400 ft. and below – no authorization required  Class B, C, D, or E airspace designated for an airport requires authorization or waiver  May not operate over open-air assemblies	Hobby  Community-Based Organizations (CBOs)  Educational institutions
<b>Small Civil</b> 14 CFR Part 107 AC 107-2A	UAS < 55 lbs.  Registered in accordance with Part 47 or 48	Part 107 Remote Pilot Certificate with small UAS (sUAS) rating  VLOS	Class G 400 ft. and below – no authorization required  Class B, C, D, or E airspace designated for an airport require authorization or waiver  May not operate over open-air assemblies	Wildlife surveys  Pipeline/powerline inspections  Real estate/wedding videos
<b>Public (Governmental) and Civil</b> 14 CFR Part 91 AC 00-1.1B	UAS > 55 lbs.  As specified in the exemption	Part 107 Remote Pilot Certificate  -OR-  Self-certification by public agency	Blanket COA or standard COA for specific airspace  All operations require air traffic authorizations except for certain Special Activity Airspace (SAA)	Public agency test site operations  Civil – United Parcel Service (UPS), railway operators
<b>Special Governmental Interest</b> JO 7200.23C		Part 107 Remote Pilot Certificate	Standard COA for specific airspace	Homeland security  Law enforcement  Emergency operations
<b>Package Delivery</b> 14 CFR Part 135	May obtain additional information from Flight Standards District Office (FSDO)	Limited Part 135 airman certificate	May obtain additional information from FSDO	Food delivery  Mail delivery
<b>Experimental</b> 14 CFR Part 21 FAA Order 8130.34D	Experimental special airworthiness certificate	Part 107 Remote Pilot Certificate	Standard COA for specific airspace	Research and development  Crew training  Exhibition
<b>Counter-UAS (C-UAS)</b>	Restricted to specific U.S. agencies	Self-certification by public agency		Disrupt control of other UAS operations

<sup>1</sup> All UAS greater than 0.55 lbs. must be registered

### 3.1 TYPES OF UAS OPERATIONS—RECREATIONAL

Recreational flyers and Community-Based Organizations (CBOs) must follow the safety guidelines of existing aeromodelling organizations or use the FAA-provided safety guidelines. All requirements and operational limitations must be met. Recreational flyers should use the **B4UFLY** app or website to determine where they can and cannot fly.

Resources	
	<a href="http://www.faa.gov/uas/recreational_fliers">www.faa.gov/uas/recreational_fliers</a>
	<a href="http://B4UFLY.kittyhawk.io">B4UFLY.kittyhawk.io</a>
	<a href="https://faadronezone.faa.gov/">https://faadronezone.faa.gov/</a>
	Advisory Circular 91-57
	P.L. 115-254, Section 349

#### Pilot Requirements

- The operator passed an aeronautical knowledge and safety test (The Recreational UAS Safety Test [TRUST]) and maintains proof of test passage to be made available to the Administrator or a designee of the Administrator or law enforcement upon request.
- The UAV is flown within the VLOS of the person operating the aircraft or a visual observer co-located and in direct communication with the operator.

#### Aircraft Requirements

- Any UAV over 0.55 lbs. must be registered through the FAA’s **DroneZone** and proof of registration is made available to the Administrator or a designee of the Administrator or law enforcement upon request.
- Registered UAVs must be externally marked with the registration number or unique identifier.

#### Airspace Requirements

- In Class B, C, or D airspace or within the lateral boundaries of the surface area of Class E airspace designated for an airport, the operator must obtain prior authorization from the Administrator or designee before operating and comply with all airspace restrictions and prohibitions. Authorizations are obtained through **Low Altitude Authorization and Notification Capability (LAANC)** or **DroneZone**.
- In Class G (uncontrolled) airspace, the UAV must be flown from the surface to not more than 400 ft. AGL and complies with all airspace restrictions and prohibitions.
- Per 14 CFR Part 107 and 49 USC § 44809, ATC services are not provided for model aircraft operating in the NAS at any altitude or to any UAS operating in the NAS at or below 400 ft. AGL.

#### Operational Limitations

- The aircraft can only be flown for recreational purposes (enjoyment).
- The UAV must be operated in accordance with or within the programming of a CBO’s set of safety guidelines that are developed in coordination with the FAA.

### Definitions

**Model aircraft** means an unmanned aircraft that is: (1) capable of sustained flight in the atmosphere; (2) flown within VLOS of the person operating the aircraft; and (3) flown for hobby or recreational purposes.

- The UAV must be operated in a manner that does not interfere with, and gives way to, any manned aircraft.
- UAVs must not be operated over open-air assemblies.

Resources	
	<a href="http://www.faa.gov/uas/educational_users">www.faa.gov/uas/educational_users</a>
	P.L. 115-254, Section 350

### Educational Institutions

Drones used for educational purposes can be operated under the rules for recreational flyers. This includes educational programs run by institutions of higher education, Junior Reserve Officer Training Corps (JROTC), and recognized CBOs.

## 3.2 TYPES OF UAS OPERATIONS—SMALL CIVIL

Small civil operations cover a wide range of uses including videography and infrastructure inspection. All requirements and operational limitations must be met.

### Pilot Requirements

- The operator must have passed an aeronautical knowledge and safety test (Unmanned Aircraft General - Small [UAG]) and received a Remote Pilot Certificate. The operator must have the Remote Pilot Certificate available to the Administrator or a designee of the Administrator or law enforcement upon request.
- The RPIC, visual observer (if one is used), and person manipulating the flight control of the small UAS (sUAS) must be able to see the UAV throughout the entire flight.
- The RPIC must assess the operating environment, considering risks to persons and property in the immediate vicinity both on the surface and in the air.

### Aircraft Requirements

- UAV must be smaller than 55 lbs.
- Any UAV over 0.55 lbs. must be registered through the FAA's **DroneZone** and proof of registration is made available to the Administrator or a designee of the Administrator or law enforcement upon request.
- Registered UAVs must be externally marked with the registration number or unique identifier.

Resources	
	<a href="http://www.faa.gov/uas/commercial_operators/become_a_drone_pilot/">www.faa.gov/uas/commercial_operators/become_a_drone_pilot/</a>
	<a href="https://faadronezone.faa.gov/">https://faadronezone.faa.gov/</a>
	<a href="http://www.faa.gov/uas/programs_partnerships/data_exchange/">www.faa.gov/uas/programs_partnerships/data_exchange/</a>
	14 CFR Part 107
	AC 107-2

### Airspace Requirements

- Authorizations for small civil operations are obtained through **LAANC** or **DroneZone**.
- No person may operate a UAV in Class B, Class C, or Class D airspace or within the lateral boundaries of the surface area of Class E airspace designated for an airport unless that person has prior authorization from ATC.
- The altitude of the small UAV cannot be higher than 400 ft. AGL, unless the small UAV:
  - Is flown within a 400-ft. radius of a structure; and

- Does not fly higher than 400 ft. above the structure's immediate uppermost limit.

### Operational Limitations

- The groundspeed of the small UAV may not exceed 87 knots (100 miles per hour).
- The minimum flight visibility, as observed from the location of the control station must be no less than 3 statute miles.
- A person may not manipulate flight controls or act as a RPIC or visual observer in the operation of more than one UA at the same time.
- Must yield the right of way to all aircraft, airborne vehicles, and launch and reentry vehicles.
- UAVs must not be operated over open-air assemblies.
- No person may operate a small UAV over a human being unless:
  - That human being is directly participating in the operation of the small UAV, or
  - That human being is located under a covered structure or inside a stationary vehicle that can provide reasonable protection from a falling small UAV.
- No person may operate an sUAS at night unless:
  - The RPIC of the small UAV has completed an initial knowledge test or training, and
  - The small UAV has lighted anti-collision lighting visible for at least 3 statute miles that has a flash rate sufficient to avoid a collision.
- No person may operate an sUAS during periods of civil twilight unless the small UA has lighted anti-collision lighting visible for at least 3 statute miles that has a flash rate sufficient to avoid a collision.
- The minimum distance of the small UAV from clouds must be no less than:
  - 500 ft. below the cloud, and
  - 2,000 ft. horizontally from the cloud.
- An object may not be dropped from a small UAV in a manner that creates an undue hazard to persons or property.

## Definitions

**Civil aircraft** means aircraft other than public aircraft.

**Flight visibility** means the average slant distance from the control station at which prominent unlighted objects may be seen and identified by day and prominent lighted objects may be seen and identified by night.

**Civil twilight refers to the following:**

- (1) Except for Alaska, a period of time that begins 30 minutes before official sunrise and ends at official sunrise;
- (2) Except for Alaska, a period of time that begins at official sunset and ends 30 minutes after official sunset; and
- (3) In Alaska, the period of civil twilight as defined in the Air Almanac.

### 3.3 TYPES OF UAS OPERATIONS—PUBLIC (GOVERNMENTAL) AND CIVIL

Public (governmental) operators include federal agencies; state, municipal, and tribal governments; and universities. Examples of civil operators include the UPS and railways (e.g., Burlington Northern Santa Fe Railway). Any operation that does not meet the statutory criteria for a public aircraft operation is considered a civil aircraft operation and must be conducted in accordance with all FAA regulations applicable to the operation. For UAS operating as civil aircraft, the authority is a special airworthiness certificate, restricted category aircraft (21.25), Type Certificate, or a Section 44807 exemption with COAs. Part 91 rules are applicable for UAVs over 55 lbs. and civil operators should reference 49 USC §44807 for requesting FAA authorization.

#### Pilot Requirements

- The RPIC must assess the operating environment, considering risks to persons and property in the immediate vicinity both on the surface and in the air.
- The RPIC can operate under Part 91 with a current medical and biennial flight review, otherwise, a Part 107 Remote Pilot Certificate is required.

#### Aircraft Requirements

- There are no limitations on size or weight.
- Any UAV over 55 lbs. must be registered through the FAA’s traditional aircraft registration under 14 CFR Part 47 using the Aircraft Registration Application, AC Form 8050-1. Proof of registration must be made available to the Administrator or a designee of the Administrator or law enforcement upon request.
- Registered UAVs must be externally marked with the registration number or unique identifier.

#### Airspace Requirements

- Give way to all manned aircraft, except when operating under Instrument Flight Rules (IFR). Operators should not impede, delay, or divert manned aircraft operations, except as directed by ATC for operational necessity.
- For UAS operating (including tethered/moored UAS) as public aircraft, the authority is the **COA** or as specified in a Memorandum of Agreement (MOA), or Memorandum of Understanding (MOU) between the using agency and FAA Headquarters. These types include:
  - Standard COA
  - Blanket COA
- For UAS operating as civil aircraft, the authority is a special airworthiness certificate, restricted category aircraft (21.25), Type Certificate, or a Section 44807 exemption with COAs.
- When the Section 44807 exemption is granted, the petitioner will be issued a Blanket COA. If the operation cannot be conducted under the provisions of the Blanket COA, the proponent must apply for a Standard COA. A waiver request to a Blanket COA will not be approved.

Resources	
	14 CFR Part 91
	49 USC § 40102, 40125
	49 USC §44807
	FAA Order JO 7210.3 Section 5
	AC 00-1.1
	<a href="https://www.faa.gov/licenses_certificates/aircraft_certification/aircraft_registry/UA/">https://www.faa.gov/licenses_certificates/aircraft_certification/aircraft_registry/UA/</a>
	Form AC 8050-1

## Operational Limitations

- A person may not manipulate flight controls or act as a RPIC or visual observer in the operation of more than one UA at the same time unless authorized in the COA.
- Flights below flight level 180 must have a dedicated observer or a waiver. These duties will be performed by a ground-based observer or chase plane.
- UAS operating under Part 91 COA can be Visual Flight Rules (VFR) or IFR. UAS flying under IFR are handled in the same manner as manned IFR aircraft; however, consideration is taken regarding the possibility of unique UAS performance characteristics.
- If a Part 91 operation is conducted entirely at or below 400 ft. AGL then any ATC services will be contained in a Letter of Agreement (LOA) or ATC Memorandum.
- All operations require air traffic authorization with the exception of certain Special Activity Airspace (SAA).
- The following operations are not authorized:
  - Instructions to visually follow another aircraft
  - Opposite Direction Operations (ODO)
  - Special VFR operations
  - Operations requiring UAS to maintain visual separation
- Transponder and Automatic Dependent Surveillance – Broadcast (ADS-B) Out equipment use limitations apply (see 14 CFR 91.215(e), 14 CFR 91.225(i)).
- Procedures for non-joint-use Department of Defense (DOD) airfield operations will be specified by the DOD.

## Definitions

**Public aircraft** means an aircraft owned or leased and operated by the government of the United States, a State, the District of Columbia, or a territory or possession of the United States or a political subdivision of one of these governments.

For the sole purpose of determining public aircraft status, 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.

### 3.4 TYPES OF UAS OPERATIONS—SPECIAL GOVERNMENTAL INTEREST (SGI)

First responders and other organizations responding to emergency situations may be eligible for expedited approval through the SGI process. Operations must directly support an active homeland security, law enforcement, or emergency operations effort, or some other response, relief, or recovery activity benefiting a critical public good. These types of operations include:

- Firefighting
- Search and rescue
- Law enforcement
- Utility or other critical infrastructure restoration
- Damage assessments supporting disaster recovery related insurance claims
- Media coverage providing crucial information to the public

Resources	
	<a href="https://www.faa.gov/uas/advanced_operations/emergency_situations/">https://www.faa.gov/uas/advanced_operations/emergency_situations/</a>
	<a href="https://www.faa.gov/caps">caps.faa.gov</a>
	7210.3CC Section 5
	JO 7200.23

Requested operations must be flown by a governmental entity or sponsored/supported by a governmental entity.

#### Pilot Requirements

- Operators must be operating under the authority of a current **COA** or with a current Part 107 Remote Pilot Certificate.
- The RPIC must assess the operating environment, considering risks to persons and property in the immediate vicinity both on the surface and in the air.

#### Aircraft Requirements

- There are no limitations on size or weight.
- All aircraft must be registered with FAA to be issued a COA.
- Any UAV over 55 lbs. must be registered through the FAA’s traditional aircraft registration under 14 CFR Part 47 using the Aircraft Registration Application, AC Form 8050-1. Proof of registration must be made available to the Administrator or a designee of the Administrator or law enforcement upon request.
- Registered UAVs must be externally marked with the registration number or unique identifier.

#### Airspace Requirements

- An approved COA is required, serving as operational approval for the specific airspace in which operations may be conducted. Applications for a COA are submitted through the COA Application Processing System (CAPS), not the public docket.
- An FAA issued Blanket COA is required for flights at or below 400 ft. in class G airspace to all UAS operators with a Section 44807 exemption as appropriate.

### Operational Limitations

- UAS operations must be conducted within a timeframe compatible with the processing time required for the COA.
- Authorization process:
  - Operators make their email request with the System Operations Support Center (SOSC).
  - For an immediate emergency, the requestor should follow up with a call to SOSC (phone is answered 24/7).
  - The SOSC will:
    - Coordinate with affected ATC facilities.
    - Determine and implement any needed mitigations (includes TFRs if necessary).
    - Implement the mitigations and other authorizations through an addendum to the COA or Part 107 authorization/waiver.
  - If an operator calls to request an SGI, refer them to the SOSC.

SOSC	
	(202) 267-8276
	9-aotr-hq-sosc@faa.gov

### First Responder Tactical Beyond Visual Line of Sight (TBVLOS)

In a time of extreme emergencies to safeguard human life, first responders may require the capability to operate their UAV Beyond Visual Line of Sight (BVLOS) to assess the operational environment such as a fire scene at a large structural fire, to conduct an aerial search on a large roof area for a burglary in progress, or to fly over a heavily forested area to look for a missing person. To support public UAS operators acting in an active first responder capacity, the FAA may approve Tactical BVLOS (TBVLOS) waivers to 14 CFR 91.113(b). These temporary BVLOS flights are flown to both reduce risk to first responders and to ensure the safety of the communities they serve.

Resources	
	9-UAS-91.113Waivers@faa.gov
	<a href="https://caps.faa.gov">https://caps.faa.gov</a>
	FAA Form 7711-1
	AC 00-1.1

The first responder must already be flying under a valid Part 91 **COA**. The UAS must remain within 1,500 ft. of the pilot in command. The RPIC must not operate any higher than 50 ft. above or greater than 400 ft. laterally of the nearest obstacle while operating TBVLOS. The 50 ft. above an obstacle cannot exceed the 400 ft. AGL hard ceiling. Emergency operations that exceed the 400 ft. hard ceiling or the **UAS Facility Map (UASFM)** altitude value require an SGI COA/Waiver from the SOSC. First responders may operate TBVLOS in controlled airspace as long as they don't exceed the UASFM altitude values, which is a hard ceiling for these operations. **LAANC** authorizations are not required to conduct TBVLOS operations.

## Definitions

A **Beyond Visual Line of Sight (BVLOS)** operation is when the individual responsible for controlling the flight of the UA cannot maintain direct unaided (other than by corrective lenses or sunglasses, or both) visual contact with the UA, other aircraft, terrain, adverse weather, or obstacles to determine whether the UA endangers life or property or both.



### 3.5 TYPES OF UAS OPERATIONS—PACKAGE DELIVERY

Package delivery operators must use FAA's existing Part 135 certification process, some of which the FAA has adapted for drone operations by granting exemptions for rules that don't apply to drones, such as the requirement to carry the flight manuals on board the aircraft. Part 135 certification is the only path for small drones to carry the property of another for compensation beyond VLOS. The FAA issues air carrier certificates to U.S. applicants based on the type of services they plan to provide and where they want to conduct their operations. Operators must obtain airspace authorizations and air carrier or operating certificates before they can begin operations.

#### Pilot Requirements

Package delivery operators must use FAA's existing Part 135 certification process and the RPIC must meet the VFR/IFR requirements outlined in Part 135.

#### Aircraft Requirements

- Any UAV over 55 lbs. must be registered through the FAA's traditional aircraft registration under 14 CFR Part 47 using the Aircraft Registration Application, AC Form 8050-1. Proof of registration must be made available to the Administrator or a designee of the Administrator or law enforcement upon request.
- Registered UAVs must be externally marked with the registration number or unique identifier.
- UAVs must be type certified and consistent with the operator's certificate.
- For UAS operating as civil aircraft, the authority is a special airworthiness certificate, restricted category aircraft (21.25), Type Certificate, or a Section 44807 exemption with COAs.
- More information may be obtained at the responsible FSDO.

#### Airspace Requirements

- Give way to all manned aircraft, except when operating under IFR. Operators should not impede, delay, or divert manned aircraft operations, except as directed by ATC for operational necessity.
- When the Section 44807 exemption is granted, the petitioner will be issued a Blanket COA. If the operation cannot be conducted under the provisions of the Blanket COA, the proponent must apply for a Standard COA. A waiver request to a Blanket COA will not be approved.
- More information may be obtained at the responsible FSDO.

#### Operational Limitations

Certificates are available for four types of Part 135 operations which may limit the scope of operations and is based on the specific authorization received.

Resources	
	<a href="https://www.faa.gov/uas/advanced_operations/package_delivery_drone/">https://www.faa.gov/uas/advanced_operations/package_delivery_drone/</a>
	<a href="http://www.faa.gov/licenses_certificates/airline_certification/135_certification/">www.faa.gov/licenses_certificates/airline_certification/135_certification/</a>
	<a href="https://www.faa.gov/about/office_org/field_offices/fsdo/">https://www.faa.gov/about/office_org/field_offices/fsdo/</a>
	FAA Order 8900.1
	AC 00-1.1B

### 3.6 TYPES OF UAS OPERATIONS—EXPERIMENTAL

A special airworthiness certificate covers a wide variety of aircraft in seven different categories. Special airworthiness certificates limit operation and use of the aircraft. The most common category of special airworthiness certificates for UAS are those in the experimental category. FAA Order 8130.34 establishes procedures for special airworthiness certification of UAS and optionally piloted aircraft. Special airworthiness certificates in the experimental category may be issued for:

- Research and development
- Showing compliance with regulations
- Crew training
- Exhibition
- Market survey

Resources	
	<a href="https://www.faa.gov/uas/advanced_operations/certification/">https://www.faa.gov/uas/advanced_operations/certification/</a>
	<a href="http://www.faa.gov/aircraft/air_cert/airworthiness_certification/sp_awcert/experiment/sac/">www.faa.gov/aircraft/air_cert/airworthiness_certification/sp_awcert/experiment/sac/</a>
	FAA Order 8130.34

Civil UAS operators may apply for the following:

- 21.191 special airworthiness certificate in the experimental category for the purposes of research and development, showing compliance with regulations, crew training, exhibition, and market survey.
- 21.197 special flight permit for the purpose of production flight testing new aircraft.

For inquiries regarding 21.191 experimental certificates or 21.197 special flight permits, individuals should contact their geographic FAA office.

#### Pilot Requirements

- The RPIC must assess the operating environment, considering risks to persons and property in the immediate vicinity both on the surface and in the air.
- The RPIC can operate under Part 91 with a current medical and biennial flight review, otherwise, a Part 107 Remote Pilot Certificate is required.

#### Aircraft Requirements

- Any UAV over 0.55 lbs. must be registered through the FAA’s **DroneZone** and proof of registration is made available to the Administrator or a designee of the Administrator or law enforcement upon request.
- Any UAV over 55 lbs. must be registered through the FAA’s traditional aircraft registration under 14 CFR Part 47 using the Aircraft Registration Application, AC Form 8050-1. Proof of registration must be made available to the Administrator or a designee of the Administrator or law enforcement upon request.
- Registered UAVs must be externally marked with the registration number or unique identifier.
- A valid airworthiness certificate in the experimental category.

#### Airspace Requirements

- Give way to all manned aircraft, except when operating under IFR. Operators should not impede, delay, or divert manned aircraft operations, except as directed by ATC for operational necessity.

### Operational Limitations

- Specific operational limitations will apply due to the type of the airworthiness certificate and will be specified within the certificate.

## 3.7 TYPES OF UAS OPERATIONS—COUNTER UAS (C-UAS)

C-UAS operations attempt to disrupt control of the UAS by disabling the UAS through intercepting, interfering, or causing interference with wire, oral, electronic, or radio communications used to control the UAS. Only these four federal agencies are authorized to deploy C-UAS systems: the DOD, Department of Homeland Security (DHS), Department of Energy (DOE), and Department of Justice (DOJ). All C-UAS operations are required to be coordinated with the FAA to assess impact and mitigate risks to the NAS.

### Coordination and Communication

- Communications related to C-UAS will be on landlines.
- The affected ATC facilities will not discuss C-UAS operations with any outside entity.
- Specific coordination methodologies/phraseology for ATC facilities and the Joint Air Traffic Operations Command (JATOC) are detailed within the WASP and HORNET protocols (need-to-know basis).

## 4.0 AIR TRAFFIC RESPONSIBILITIES

Air traffic responsibilities vary depending on type of UAS and operations. Unknown or suspicious activities should be reported according to guidelines in Section 6.0, Reporting Pilot Activities/Suspicious Aircraft.

FAA UAS Contact	
	844-FLY-MY-UA
	UASHelp@faa.gov
	<a href="http://www.faa.gov/uas/contact_us">www.faa.gov/uas/contact_us</a>

### Flight Service Responsibilities

Flight Service should issue UAV advisory information for known, observed, or pilot-reported UAV activity when, in your judgment, proximity warrants it. If known, include position, altitude, distance, course, and type of UAV. For reported UAV activity, continue to issue advisories to potentially impacted aircraft for at least 15 minutes following the last report.

Remote Airport Information Service (RAIS) elements and phraseology examples:

- “Unmanned aircraft activity, 2 miles east of Ketchikan airport, 300 feet and below.”
- “Unmanned aircraft activity observed, approximately 1 mile east of Kenai airport, altitude unknown.”

### Recreational Operations

Per 14 CFR Part 107 and 49 USC § 44809, ATC services are not provided for model aircraft operating in the NAS at any altitude or to any UAS operating in the NAS at or below 400 ft. AGL.

### Small Civil Operations

- ATC services are not provided to any UAS operating in the NAS at or below 400 ft. AGL.
- No person may operate a UAV in Class B, Class C, or Class D airspace or within the lateral boundaries of the surface area of Class E airspace designated for an airport unless that person has prior authorization from ATC.

### Public (Governmental) and Civil Operations

- UAS operating under Part 91 COA can be VFR or IFR. UAS flying under IFR are handled in the same manner as manned IFR aircraft; however, consideration is taken regarding the possibility of unique UAS performance characteristics.
- If a Part 91 operation is conducted entirely at or below 400 ft. AGL, then any ATC services will be contained in a LOA or ATC Memorandum.
- All operations require air traffic authorization with the exception of certain SAA.
- Air traffic facility management are required to ensure controllers are familiar with the contents of each COA and any applicable LOAs impacting their area of specialization.
- Communication with any UAS operator must be on a recorded line, when available.
- In the event of a UAS lost link, procedures outlined in FAA Order JO 7110.65, paragraph 5-2-9, UAS Lost Link, will be followed. Lost link procedures will vary based on the UAS type and must be included in the COA; LOAs between ATC facilities and UAS operators should address contingency procedures, if not contained in the COA.
- In the event of a UAS emergency, ATC will follow procedures outlined in FAA Order JO 7110.65, Air Traffic Control, Chapter 10.

### Special Governmental Interest Operations

- SOSOC will coordinate operations and authorization with affected ATC facilities. Mitigations and other authorizations will be implemented through an addendum to the COA or Part 107 authorization/waiver.
- Air traffic facility management are required to ensure controllers are familiar with the contents of each COA and any applicable LOAs impacting their area of specialization.
- Communication with any UAS operator must be on a recorded line, when available.

### Package Delivery Operations

- UAS operating under Part 91 COA can be VFR or IFR. UAS flying under IFR are handled in the same manner as manned IFR aircraft; however, consideration is taken regarding the possibility of unique UAS performance characteristics.
- If a Part 91 operation is conducted entirely at or below 400 ft. AGL, then any ATC services will be contained in a LOA or ATC Memorandum.
- All operations require air traffic authorization with the exception of certain SAA.
- Air traffic facility management are required to ensure controllers are familiar with the contents of each COA and any applicable LOAs impacting their area of specialization.

- Communication with any UAS operator must be on a recorded line, when available.
- In the event of a UAS lost link, procedures outlined in FAA Order JO 7110.65, paragraph 5-2-9, UAS Lost Link, will be followed. Lost link procedures will vary based on the UAS type and must be included in the COA; LOAs between ATC facilities and UAS operators should address contingency procedures, if not contained in the COA.
- In the event of a UAS emergency, ATC will follow procedures outlined in FAA Order JO 7110.65, Air Traffic Control, Chapter 10.

### Experimental Operations

- UAS operating under Part 91 COA can be VFR or IFR. UAS flying under IFR are handled in the same manner as manned IFR aircraft; however, consideration is taken regarding the possibility of unique UAS performance characteristics.
- If a Part 91 operation is conducted entirely at or below 400 ft. AGL, then any ATC services will be contained in a LOA or ATC Memorandum.
- All operations require air traffic authorization with the exception of certain SAA.
- Air traffic facility management are required to ensure controllers are familiar with the contents of each COA and any applicable LOAs impacting their area of specialization.
- Communication with any UAS operator must be on a recorded line, when available.
- In the event of a UAS lost link, procedures outlined in FAA Order JO 7110.65, paragraph 5-2-9, UAS Lost Link, will be followed. Lost link procedures will vary based on the UAS type and must be included in the COA; LOAs between ATC facilities and UAS operators should address contingency procedures, if not contained in the COA.
- In the event of a UAS emergency, ATC will follow procedures outlined in FAA Order JO 7110.65, Air Traffic Control, Chapter 10.

### C-UAS Operations

- Communications related to C-UAS will be on landlines.
- The affected ATC facilities will not discuss C-UAS operations with any outside entity.

## 5.0 NOTICES TO AIR MISSIONS (NOTAMS)

Notices to Air Missions (NOTAMs) contain information essential to personnel concerned with flight operations, but not known far enough in advance to be published by other means. It states the abnormal status of a component of the NAS, not the normal status. NOTAMs may be issued for UAS operations.

- Upon receipt of appropriate notification/authorization, but not more than 7 days prior to the event, originate an AIRSPACE NOTAM using the format described in FAA JO Order 7930.2.
- FAA authorizations (e.g., COA, waiver, special airworthiness, or similar document) and/or air traffic notifications are required by the proponent for UA operations. Flight Service specialists must ensure the NOTAM originator is aware of this.
- NOTAMs indicate the real-time and abnormal status of the NAS impacting every user. Therefore, UAS NOTAMs must be issued only for the actual activity time and areas. Examples:
  - If the activity is MON–FRI 0300–1215, SAT 2300–1430, SUN 0100–1600 2205162200 – 2205271215, the NOTAM must not be issued from May 16th 0300 UTC to May 27th 1215 UTC continuously (i.e., without the daily times).
  - If the activities are in multiple points but not simultaneously, NOTAMs should be issued for each point, not for the entire area because this may cause unnecessary obstructions in large portions of airspace and disruptions to the NAS.
- A permanent (PERM) NOTAM must not be issued unless the accountable organization demonstrates the publication process has been initiated.

## 6.0 REPORTING PILOT ACTIVITIES/SUSPICIOUS AIRCRAFT

Unauthorized, unsafe, or suspicious UAS activities should be reported.

### 6.1 FLIGHT SERVICE REPORTING

Flight Service must ensure that occurrences of unauthorized UAS activity or authorized UAS activity that is conducted in an unsafe or hazardous manner are reported whether they are aware through either direct involvement or observation.

Per FAA Order JO 7210.3, any reported or observed unauthorized, hazardous, or suspicious UAS activities requires:

- Notification of the Domestic Events Network (DEN) Air Traffic Security Coordinator (ATSC) as soon as possible.
- Contacting local law enforcement if the UAS activity is creating a hazard to air traffic. Provide the location, description, and other pertinent information regarding the activities.
- Recording the incident via the Comprehensive Electronic Data Analysis and Reporting (CEDAR) program or, if CEDAR is not available, via the appropriate means, in accordance with FAA Order JO 7210.632, Air Traffic Organization Occurrence Reporting. Please note in the Mandatory Occurrence Report (MOR) the COA number, when available, and the violation that occurred.

### 6.2 CITIZEN REPORTING

Bystanders that want to report a UAS safety issue may use the National Aeronautics and Space Administration's (NASA) Aviation Safety Reporting System (ASRS). NASA's ASRS has a reporting form tailored to the UAS community, enables a non-punitive avenue for anonymous reporting, and is completely confidential and voluntary.

In the event of personal property damage or injury, local law enforcement should be contacted and they will determine whether FAA participation in the investigation is warranted.

Resources	
	DEN ATSC (504) 422-4423/4424/4425
	<a href="https://www.faa.gov/aircraft/safety/report/">https://www.faa.gov/aircraft/safety/report/</a>
	<a href="https://qa-www.faa.gov/uas/contact_us/report_uas_sighting">https://qa-www.faa.gov/uas/contact_us/report_uas_sighting</a>
	AC 00-46F
	<a href="https://www.faa.gov/uas/getting_started/asrp/">https://www.faa.gov/uas/getting_started/asrp/</a>
	<a href="https://asrs.arc.nasa.gov">https://asrs.arc.nasa.gov</a>
	<a href="https://www.faa.gov/about/office_org/field_offices/fsdo/all_fsdo/">https://www.faa.gov/about/office_org/field_offices/fsdo/all_fsdo/</a>
	FAA Order JO 7210.632
	FAA Order JO 7210.3

### 6.3 OPERATOR REPORTING

#### Accident Reporting

A RPIC must report to the FAA no later than 10 days after any operation of a small UA involving:

- Serious injury to any person or any loss of consciousness; or
- Damage to any property, other than the small UA, unless one of the following conditions is satisfied:
  - The cost of repair (including materials and labor) does not exceed \$500; or
  - The fair market value of the property does not exceed \$500 in the event of total loss.

To report accidents in accordance with reporting requirements in the Part 107 rule, use [DroneZone](#) or contact the nearest FAA FSDO.

For operations under the Blanket COA, any accidents, incidents, or flight operation that transgresses the lateral or vertical boundaries defined in the Blanket COA must be reported to the FAA via email within 24 hours. Accidents must be reported to the National Transportation Safety Board (NTSB) per instructions contained on the NTSB web site.

#### Additional Reporting

The FAA has extended the Aviation Safety Reporting Program (ASRP) to UAS operators, including the protections offered through NASA’s ASRS. The FAA’s ASRP enables a non-punitive avenue for anonymous reporting and is completely confidential and voluntary.

Resources	
	<a href="mailto:9-AJV-115UASOrganization@faa.gov">9-AJV-115UASOrganization@faa.gov</a>
	<a href="http://www.nts.gov">www.nts.gov</a>

### 6.4 LAW ENFORCEMENT GUIDANCE

The FAA provided law enforcement guidance for suspected unauthorized UAS operations. Additional information is available through the FAA’s Law Enforcement Assistance Program (LEAP) Office.

FAA LEAP	
	(202) 267-4641
	(202) 267-9411
	<a href="#">Law Enforcement Guidance</a>

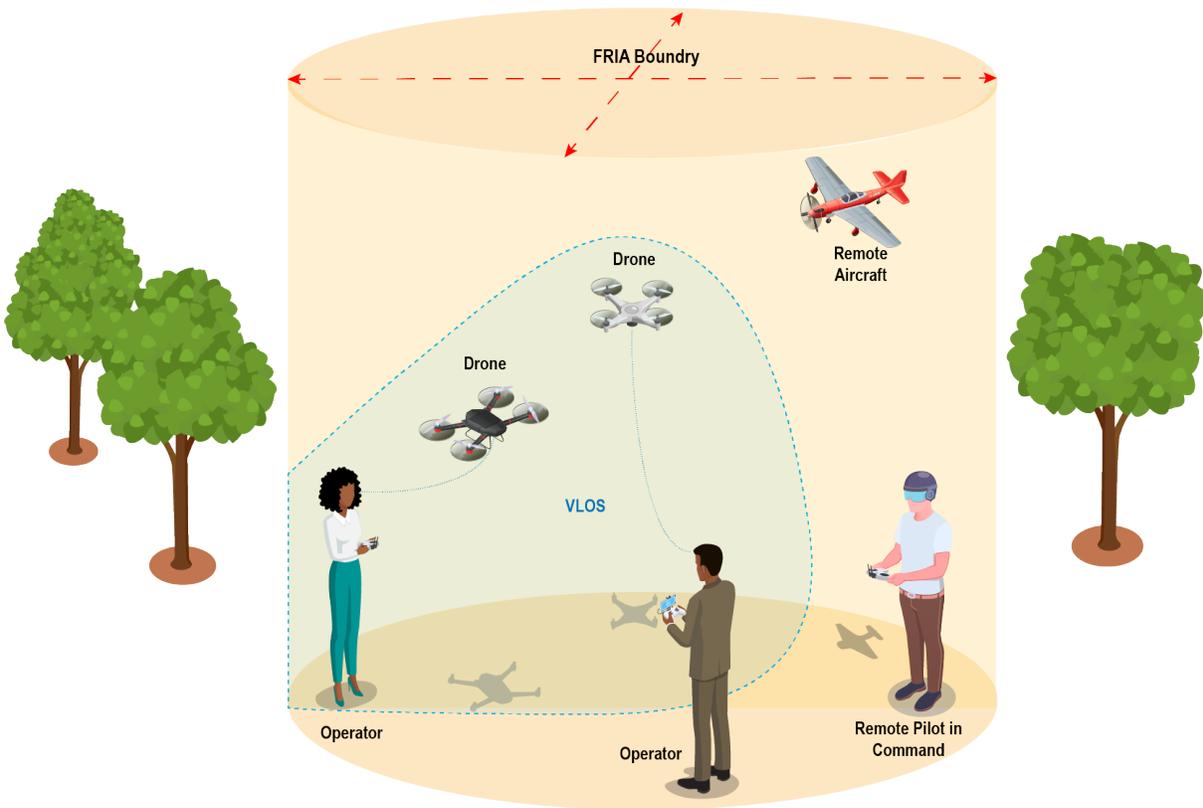
## 7.0 FAA-RECOGNIZED IDENTIFICATION AREA (FRIA)

A **FRIA** is a defined geographic area where recreational UAS not equipped with remote ID capability will be able to operate. FAA-recognized CBOs and educational institutions are eligible to apply to the FAA for FRIA status; however, any operator may fly within the area, but must follow specific rules:

Resources	
	<a href="http://www.faa.gov/uas/getting_started/remote_id/fria/">www.faa.gov/uas/getting_started/remote_id/fria/</a>

- Both the UA and the person operating it must be located within the FRIA's boundaries throughout the operation.
- The person operating the UA must be able to see it at all times throughout the operation.

For information about the FRIA application review criteria, an Advisory Circular on FRIAs will be made available prior to the effective date of the FRIA provisions for CBOs and educational institutions (September 16, 2022).



## 8.0 DRONE/REMOTE PILOT CERTIFICATION

To fly a UAS under the FAA's Small UAS Rule (Part 107), the operator must obtain a Remote Pilot Certificate from the FAA. This certificate demonstrates that the operator understands the regulations, operating requirements, and procedures for safely flying drones.

There are different requirements for first-time pilots and existing Part 61 certificate holders.

### Eligibility for First-Time Pilots

- Be at least 16 years old
- Be able to read, speak, write, and understand English
- Be in a physical and mental condition to safely fly a drone
- Pass the initial aeronautical knowledge exam: "Unmanned Aircraft General-Small (UAG)"

Resources	
	<a href="http://www.faa.gov/uas/commercial_operators/become_a_drone_pilot/">www.faa.gov/uas/commercial_operators/become_a_drone_pilot/</a>
	<a href="https://iacra.faa.gov/IACRA/">https://iacra.faa.gov/IACRA/</a>
	14 CFR Part 61
	FAA-S-ACS-10B

### Eligibility for Existing Part 61 Certificate Holders

- Must hold a pilot certificate issued under 14 CFR part 61
- Must have completed a flight review within the previous 24 months

### Requirements for Remote Pilot Certificate

- Must be easily accessible by the remote pilot during all UAS operations
- Certificate holders must complete online recurrent training every 24 calendar months to maintain aeronautical knowledge recency:
  - Anyone who holds a Part 107 Remote Pilot Certificate (regardless of aeronautical knowledge recency) must complete the Part 107 Small UAS Recurrent (ALC-677) online training course.
  - Part 107 remote pilots who are also certificated with a current flight review under Part 61 must complete the Part 107 Small UAS Recurrent (ALC-515) online training course.

## 9.0 DRONE REGISTRATION

All drones operated under Part 107 must be registered, the only exception is recreational UA that weigh less than 0.55 lbs. (250 grams) that are flown exclusively under the Exception for Recreational Flyers. All registered aircraft must have their registration number displayed on the exterior.

Resources	
	<a href="https://faadronezone.faa.gov/#/">https://faadronezone.faa.gov/#/</a>
	<a href="http://www.faa.gov/uas/getting_started/register_drone/">www.faa.gov/uas/getting_started/register_drone/</a>
	<a href="https://faa.custhelp.com/app/answers/list/kw/Registration/">https://faa.custhelp.com/app/answers/list/kw/Registration/</a>
	FAA-S-ACS-10B
	CFR Part 47

### Registration Requirements for Part 107 sUAS

- 13 years of age or older (if the owner is less than 13 years of age, a person 13 years of age or older must register the drone)
- A U.S. citizen or legal permanent resident
- For foreign operators, FAA will consider the certificate issued to be a recognition of ownership rather than a certificate of U.S. aircraft registration

UAS operators must register their aircraft through [DroneZone](#).

### Traditional Aircraft Registration under 14 CFR Part 47

- **Is required:**
  - For UA that weigh 55 lbs. or more
  - For sUAS owned by a trustee under a trust agreement
  - When the sUAS owner uses a voting trust to meet U.S. citizenship requirements
- **Is available:**
  - for sUAS that needs N-number registration to operate outside the U.S.
  - When public recording is desired for sUAS loan, lease, or ownership document

## 10.0 B4UFLY

**B4UFLY** is the simple way for drone operators to check airspace and local advisories before taking flight. There is a desktop version for preflight planning and research and a mobile application.

Key features include:

- A clear "status" indicator that informs the operator whether it is safe to fly or not.
- Informative, interactive maps with filtering options.
- Information about controlled airspace, special use airspace, critical infrastructure, airports, national parks, military training routes and temporary flight restrictions.
- The ability to check whether it is safe to fly in different locations by searching for a location or moving the location pin.
- Links to other FAA drone resources and regulatory information.

Resources	
	<a href="http://www.faa.gov/uas/recreational_fliers/where_can_i_fly/b4ufly/">www.faa.gov/uas/recreational_fliers/where_can_i_fly/b4ufly/</a>
	<a href="http://b4ufly.kittyhawk.io">b4ufly.kittyhawk.io</a>
	<a href="http://www.aloft.ai">www.aloft.ai</a>

B4UFLY does not enable operators to obtain airspace authorizations to fly in controlled airspace; these are only available through **LAANC**.

## 11.0 UAS DATA EXCHANGE

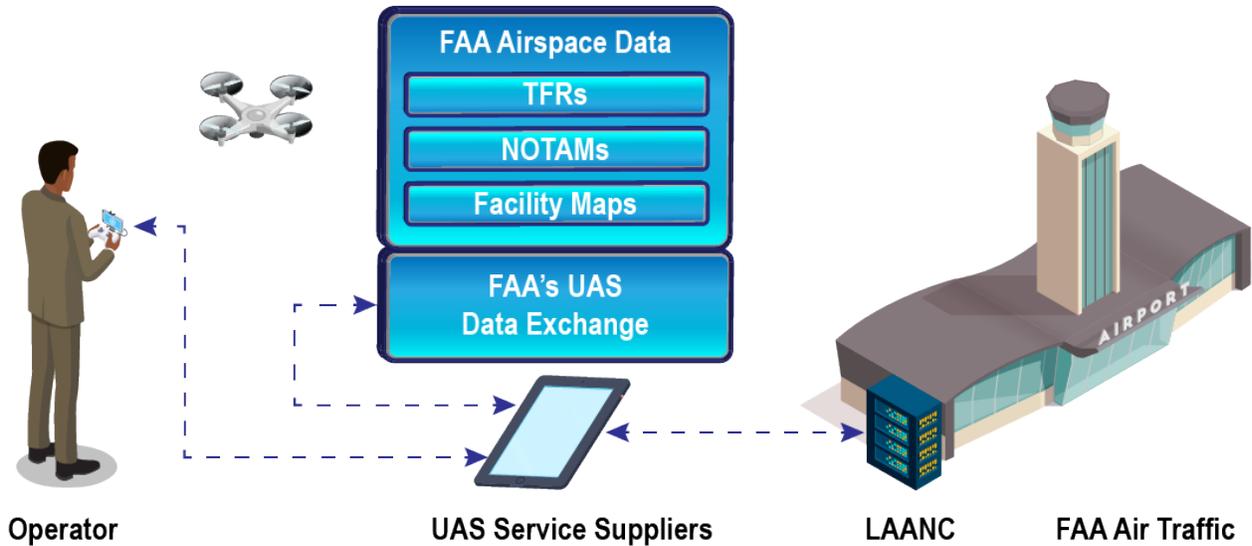
The FAA UAS Data Exchange is an innovative, collaborative approach between government and private industry facilitating the sharing of airspace data between the two parties. The UAS Data Exchange provides access to UAS Facility Maps (UASFM), Special Use Airspace (SUA) data, airports and airspace classes, as well as TFRs and NOTAMs.

### 11.1 LOW ALTITUDE AUTHORIZATION AND NOTIFICATION CAPABILITY (LAANC)

**LAANC** is the automated system for Part 107 and USC 44809 sUAS operators to request access to controlled airspace at or below 400 ft. AGL. The operator does not directly request authorization through LAANC, but must go through a **UAS Service Supplier (USS)**. USSs provide desktop and mobile applications for operators to request access to controlled airspace near airports. The USSs check the request through the UAS Data Exchange and then processes it through LAANC. The USS can provide near real-time processing of airspace authorizations in approved altitudes. A list of LAANC USSs is available on the FAA's website.

LAANC is available at over 500 LAANC-enabled facilities and over 700 airports. For accessing controlled airspace near airports where LAANC is not available, a manual process to apply for an authorization should be used at **DroneZone**.

An operation in controlled airspace that requires a waiver and an airspace authorization must be applied for through the FAA's **DroneZone**.



### 11.2 UAS FACILITY MAPS (UASFM)

**UAS Facility Maps (UASFM)** show the maximum altitudes around airports where the FAA may authorize Part 107 UAS operations without additional safety analysis. The maps should be used to inform requests for Part 107 airspace authorizations and waivers in controlled airspace. The map does not provide permission to fly within controlled airspace; it is only a reference.

### 11.3 UAS DATA DELIVERY SERVICE (UDDS)

The FAA **UDDS** is an FAA-enabled web service that makes data available to UAS operators, application developers, and other stakeholders. It is a public FAA website that delivers UAS data such as tables, Geographic Information System (GIS) layers, and online mapping—it includes downloadable data and Application Programming Interface (API) data. UAS operators should review the UAS-specific data and information provided by UDDS before operating.

Resources	
	<a href="http://www.faa.gov/uas/programs_partnerships/data_exchange/">www.faa.gov/uas/programs_partnerships/data_exchange/</a>
	<a href="http://www.faa.gov/uas/commercial_operators/uas_facility_maps/flow_chart/">www.faa.gov/uas/commercial_operators/uas_facility_maps/flow_chart/</a>
	<a href="http://faa.maps.arcgis.com">faa.maps.arcgis.com</a>
	<a href="https://udds-faa.opendata.arcgis.com">https://udds-faa.opendata.arcgis.com</a>

UDDS provides access to:

- National Security UAS Flight Restrictions (Federal sites)
- UASFM
- Recreational Fixed Flyer Sites
- Special Use Airspace (SUA)

## 12.0 CERTIFICATES OF WAIVER OR AUTHORIZATION (COA)

A **COA** is an authorization issued by the Air Traffic Organization to a public operator (an organization, not an individual) for a specific UA activity. The FAA deployed a web-based application system, the COA Application Processing System (CAPS), to provide applicants with an electronic method of requesting a COA. Applicants will need to obtain an account in order to access the online system. 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 UAS can be operated 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.

The FAA issued a Blanket COA for the following operations:

- At or below 400 ft. AGL; and
- Beyond the following distances from the airport reference point (ARP) of a public use airport, heliport, gliderport, or seaport listed in the Digital-Chart Supplement (d-CS), Alaska Supplement, or Pacific Chart Supplement of the U.S. Government Flight Information Publications:
  - 5 NM from an airport having an operational control tower; or
  - 3 NM from an airport having a published instrument flight procedure, but not having an operational control tower; or
  - 2 NM from an airport not having a published instrument flight procedure or an operational control tower; or
  - 2 NM from a heliport.
- Does not authorize flight within SUAs without coordinating and de-conflicting with the scheduling agency. Scheduling agencies for SUAs are listed in the FAA JO 7400.8.

Resources	
	<a href="http://www.faa.gov/uas/advanced_operations/certification/section_44807/">www.faa.gov/uas/advanced_operations/certification/section_44807/</a>
	<a href="mailto:9-AJR-36-UAS@faa.gov">9-AJR-36-UAS@faa.gov</a>
	<a href="https://caps.faa.gov">https://caps.faa.gov</a>
	<a href="https://www.faa.gov/uas/contact_us/">https://www.faa.gov/uas/contact_us/</a>
	Blanket COA

Emergency operations should be addressed in the COA and through the **SGI** process by calling the SOSC.

SOSC	
	(202) 267-8276
	<a href="mailto:9-aotr-hq-sosc@faa.gov">9-aotr-hq-sosc@faa.gov</a>

## 13.0 UAS-RELATED PROGRAMS AND INITIATIVES

The FAA continues to evolve UAS access and rules through various programs and initiatives.

### UAS Integration Pilot Program (IPP)

From 2017 through 2020 the FAA through the UAS IPP collaborated with state, local, and tribal governments and private sector entities to test and evaluate the integration of civil and public drone operations into the NAS.

### UAS BEYOND

The UAS BEYOND program was launched in 2020 to continue work on the remaining challenges of UAS integration, including BVLOS operations, societal and economic benefits of UAS operations, and community engagement.

#### Rulemaking

BVLOS Aviation Rulemaking Committee (ARC) was formed to make recommendations to the FAA for performance-based regulatory requirements and is drafting a report for expected for delivery in 2022.

Resources	
	<a href="http://www.faa.gov/uas/programs_partnerships/completed/integration_pilot_program/">www.faa.gov/uas/programs_partnerships/completed/integration_pilot_program/</a>
	UAS IPP Final Report
	<a href="http://www.faa.gov/uas/programs_partnerships/beyond/">www.faa.gov/uas/programs_partnerships/beyond/</a>
	<a href="http://www.faa.gov/regulations_policies/rulemaking/committees/documents/index.cfm/committee/browse/committeeID/837">www.faa.gov/regulations_policies/rulemaking/committees/documents/index.cfm/committee/browse/committeeID/837</a>

## APPENDIX A. DEFINITIONS

Term	Definition
B4UFLY	Application that provides a simple way for drone operators to check airspace and local advisories before taking flight. There is a desktop version for preflight planning and research and a mobile application.
Beyond Visual Line of Sight (BVLOS)	An operation when the individual responsible for controlling the flight of the UA cannot maintain direct unaided (other than by corrective lenses or sunglasses, or both) visual contact with the UA, other aircraft, terrain, adverse weather, or obstacles to determine whether the UA endangers life or property or both.
Certificates of Waiver or Authorization (COA)	An authorization issued by the Air Traffic Organization to a public operator (an organization, not an individual) for a specific UA activity.
Civil Aircraft	Aircraft other than public aircraft.
Civil Twilight	<p>(1) Except for Alaska, a period of time that begins 30 minutes before official sunrise and ends at official sunrise;</p> <p>(2) Except for Alaska, a period of time that begins at official sunset and ends 30 minutes after official sunset; and</p> <p>(3) In Alaska, the period of civil twilight as defined in the Air Almanac.</p>
Drone	An aircraft that is not piloted from within the aircraft. It can have either fixed wings or a single or multiple rotors for flight.
DroneZone	Application for use by UAS operators for drone registration.
FAA-Recognized Identification Area (FRIA)	A defined geographic area where recreational UAS not equipped with remote ID capability will be able to operate.
Flight Visibility	The average slant distance from the control station at which prominent unlighted objects may be seen and identified by day and prominent lighted objects may be seen and identified by night.
Governmental Function	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.
Ground Control Station (GCS)	A hardware and software unit that supports the communication with and control of the drone.
LAANC	The automated system for Part 107 and USC 44809 sUAS operators to request access to controlled airspace at or below 400 ft. AGL.
Model Aircraft	An UA that is: (1) capable of sustained flight in the atmosphere; (2) flown within VLOS of the person operating the aircraft; and (3) flown for hobby or recreational purposes.

Open-Air Assembly	Dense gatherings of people in the open, usually associated with concert venues, sporting events, parks, and beaches during certain events.
Operator	The Remote Pilot in Command (RPIC) or the person manipulating the flight control.
Public Aircraft	An aircraft owned or leased and operated by the government of the United States, a State, the District of Columbia, or a territory or possession of the United States or a political subdivision of one of these governments.
Remote Identification (ID)	The ability of a drone in flight to provide identification and location information that can be received by other parties.
Remote Pilot in Command (RPIC)	The person directly responsible for and is the final authority as to the operation of the sUAS.
Small Unmanned Aircraft (UA)	A UA weighing less than 55 lbs. on takeoff, including everything that is on board or otherwise attached to the aircraft.
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 national airspace system.
Unmanned Aircraft (UA)	An aircraft operated without the possibility of direct human intervention from within or on the aircraft.
Unmanned Aircraft System (UAS)	The entire system inclusive of all components (i.e., GCS) that allow the drone to function.
UAS Facility Map (UASFM)	Map that shows the maximum altitudes around airports where the FAA may authorize Part 107 UAS operations without additional safety analysis.
Unmanned Aerial Vehicle (UAV)	An aircraft that is not piloted from within the aircraft. It can have either fixed wings or a single or multiple rotors for flight.
UAS Data Delivery System (UDDS)	An FAA-enabled web service that makes data available to UAS operators, application developers, and other stakeholders. It is a public FAA website that delivers UAS data such as tables, Geographic Information System (GIS) layers, and online mapping—it includes downloadable data and Application Programming Interface (API) data.
UAS Service Supplier (USS)	Organizations external to the FAA that provide desktop and mobile applications for operators to request access to controlled airspace near airports.
Visual Observer	A person who is designated by the RPIC to assist the RPIC and the person manipulating the flight controls of the sUAS to see and avoid other air traffic or objects aloft or on the ground.