



**Federal Aviation
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Oklahoma UAS Workshop

Alvin Brunner AFS-810

September 2, 2020

Overview

- UAS Basics – the big picture
- Rules, Rules, Rules
- Where there's a will, there's a waiver
- Airspace & Authorizations
- Ongoing Other Stuff
 - Integrated Pilot Program
 - UAS Traffic Management
 - Other Programs



UAS Basics – the big picture stuff



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What Is a UAS?

Unmanned aircraft
system (UAS)



Drones



Unmanned aerial
vehicle (UAV)



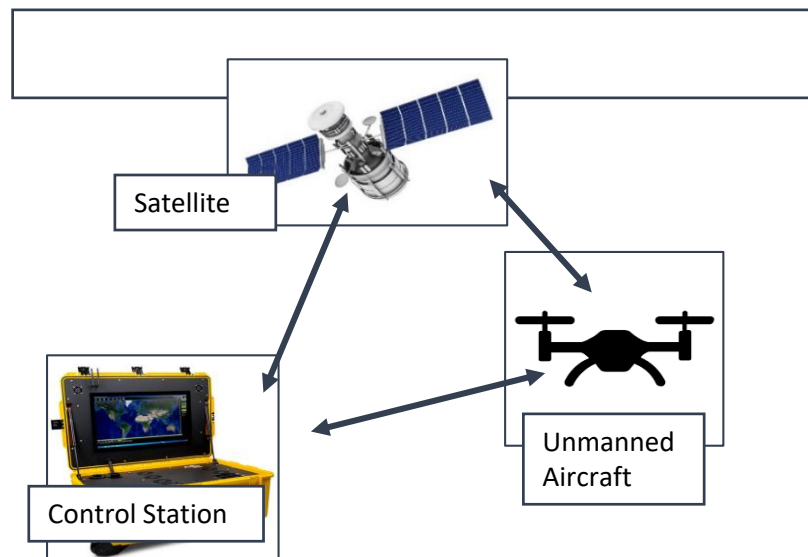
Remotely piloted
aircraft system (RPAS)



Radio-controlled
model aircraft

A UAS is a *system*:

- Unmanned Aircraft
- Control Station
- Command & Control Link(s)



<https://www.faa.gov/UAS/>

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What is the FAA's Authority?

- U.S. airspace is public space
 - 49 U.S.C. §40103(a)(1)
- UAS are aircraft subject to regulation
 - 49 U.S.C. §40102(a)(6) & §44801; 14 CFR 1.1 & Part 107
 - An aircraft is any device used, or intended to be used, for flight in the air
- UAS flown outdoors must comply with FAA regulations



History of Legislative Requirements

- FAA Modernization and Reform Act of 2012
- FAA Extension, Safety, and Security Act of 2016, Subtitle B – *UAS Safety*
- FAA Reauthorization Act of 2018, Subtitle B – *Unmanned Aircraft Systems (P.L. 115-254)*



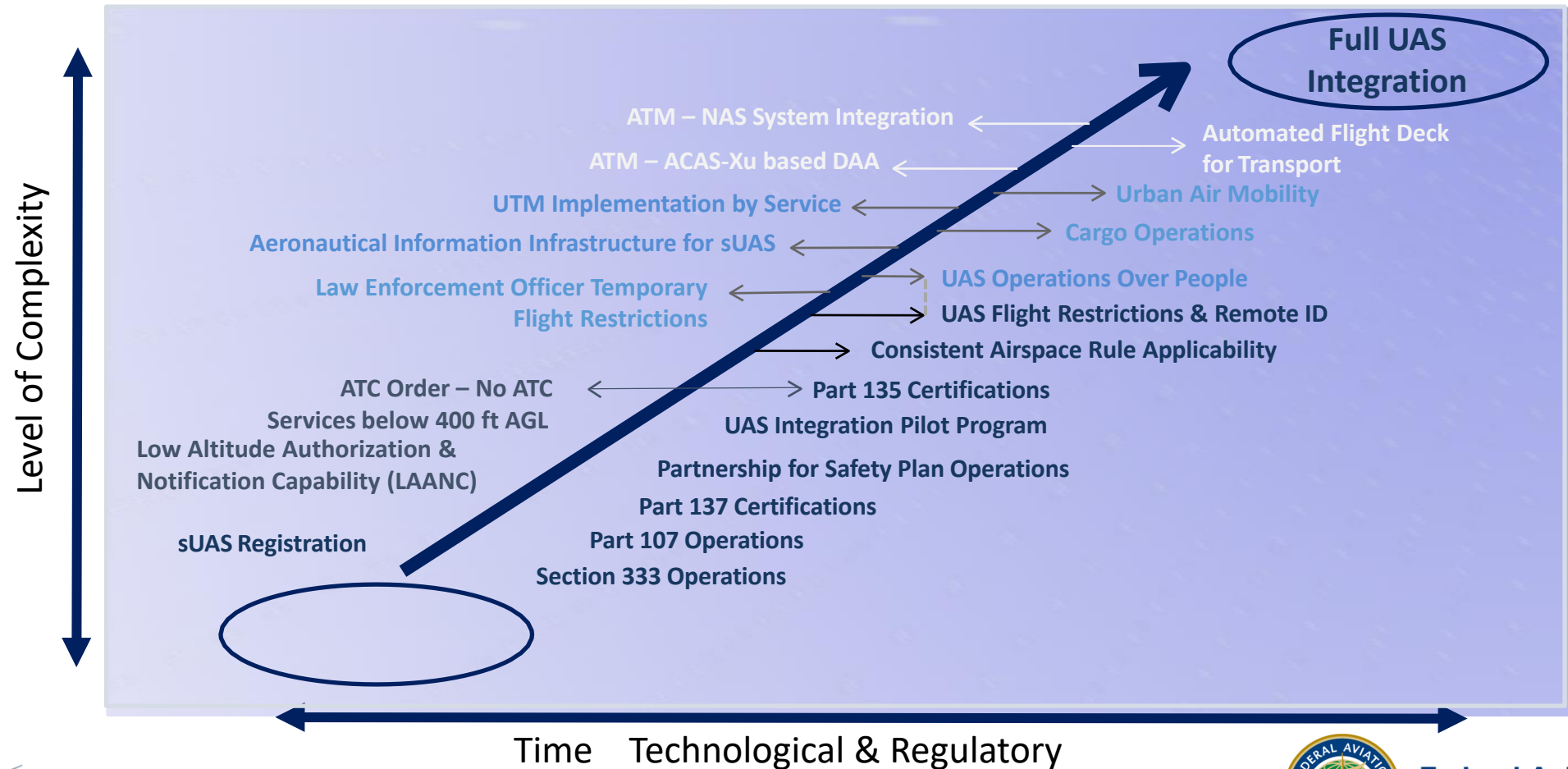
<https://www.faa.gov/UAS/>

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UAS Integration Strategy - 2020



<https://www.faa.gov/UAS/>

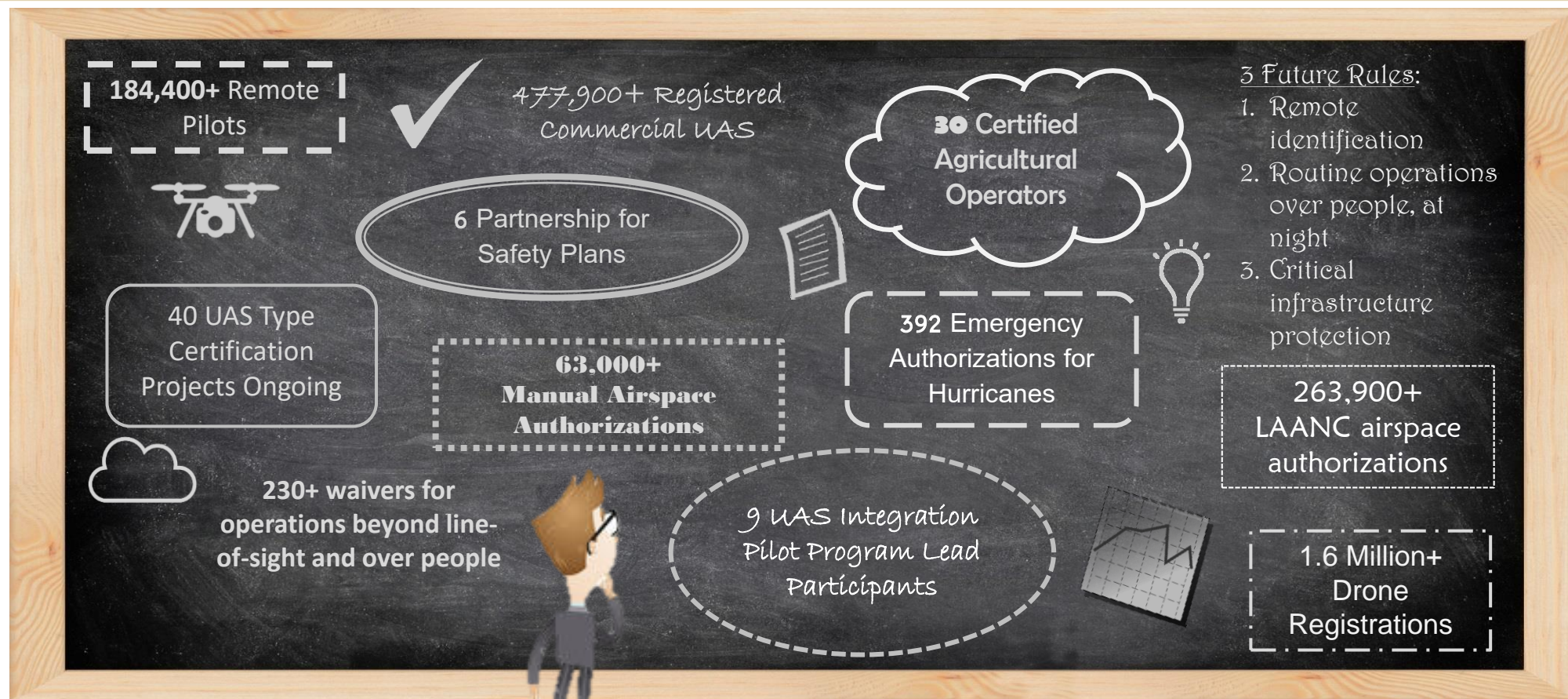
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UAS Integration – Facts and Figures

As of 7/29/2020



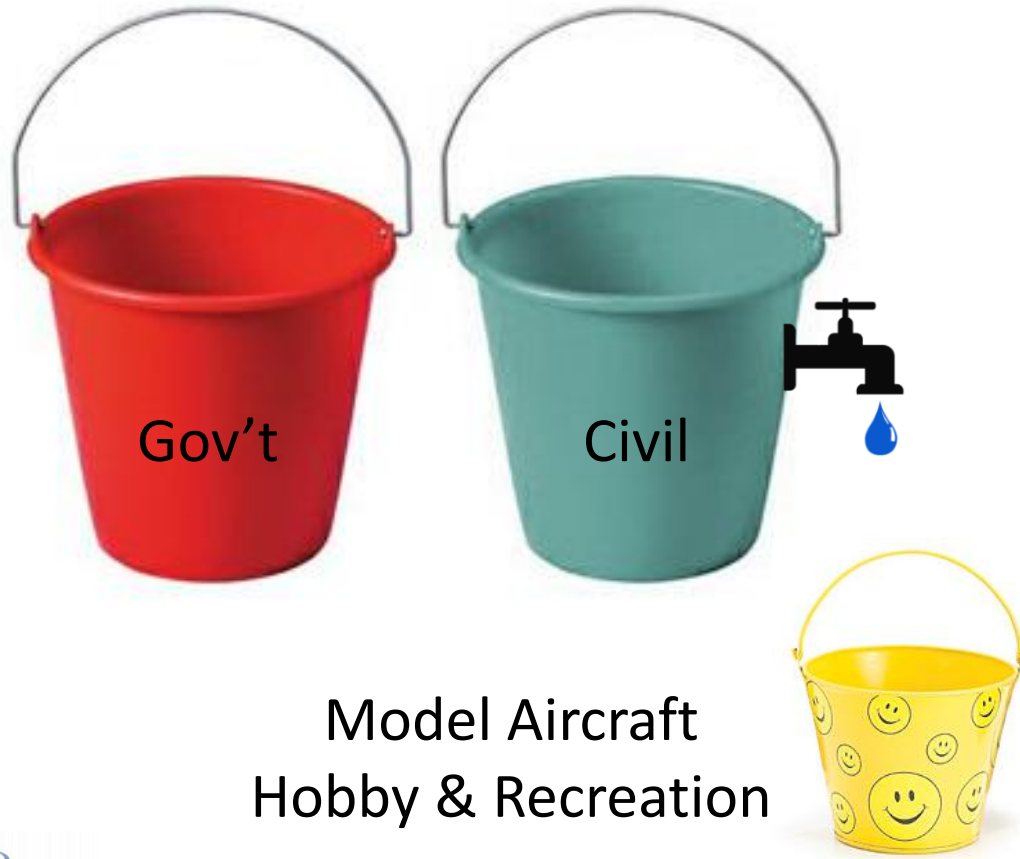
<https://www.faa.gov/UAS/>

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Types of UAS Operations



- Public Aircraft Operations
 - Aircraft Gov't owned or leased
 - Flown w/in US or its territories
 - Performing **Gov't function**
- All else are Civil operations
 - FAA governs all civil aircraft operations i.e. Part 107 for UAS
 - Recreational model aircraft have an exception, but if all conditions not met → Part 107 applies



Rules, Rules, Rules

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Parts of Part 107 at a Glance

- Remote Pilot Certificate–no cheating
- FAA can inspect UAS - anything
- Report accidents
- Registered & marked
- Condition for Safe ops
- No medical certificate needed but...
- **Remote PIC responsible for everything**; no undue hazard for any reason; no careless/reckless ops
- Don't drink & drone
- No hazardous cargo
- ✎ No ops from moving vehicle unless...
- ✎ Daytime ops only
- ✎ VLOS & only 1 UA per RPIC
- ✎ No ops over people
- ✎ Yield to manned acft; not waived - no interference w/ airport ops
- ✎ Airspace, height, speed & WX limits



Online UAS Registration

Applies to all small UAS flown outside (in the National Airspace System):

- **Hobby:** aircraft weighing less than 0.55 lbs do not need to be registered. UAS between 0.55 lbs and less-than-55 lbs can be registered online.*
- **Commercial:** all aircraft



Owner must provide name, address, email

Non-recreational owners (includes Part 107 and Public COA) must provide make, model, and serial number (if available) of each sUAS



Register through FAA DroneZone

*(UAS 55 lbs and greater must be registered under Part 47.)



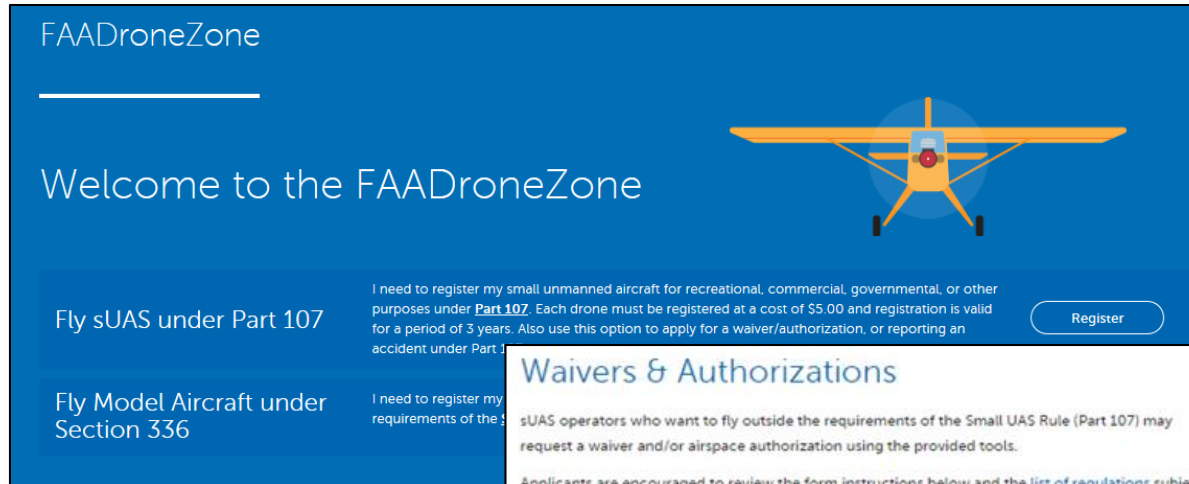
<https://www.faa.gov/UAS/>

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FAA DroneZone



FAADroneZone

Welcome to the FAADroneZone

Fly sUAS under Part 107

I need to register my small unmanned aircraft for recreational, commercial, governmental, or other purposes under **Part 107**. Each drone must be registered at a cost of \$5.00 and registration is valid for a period of 3 years. Also use this option to apply for a waiver/authorization, or reporting an accident under Part 107.

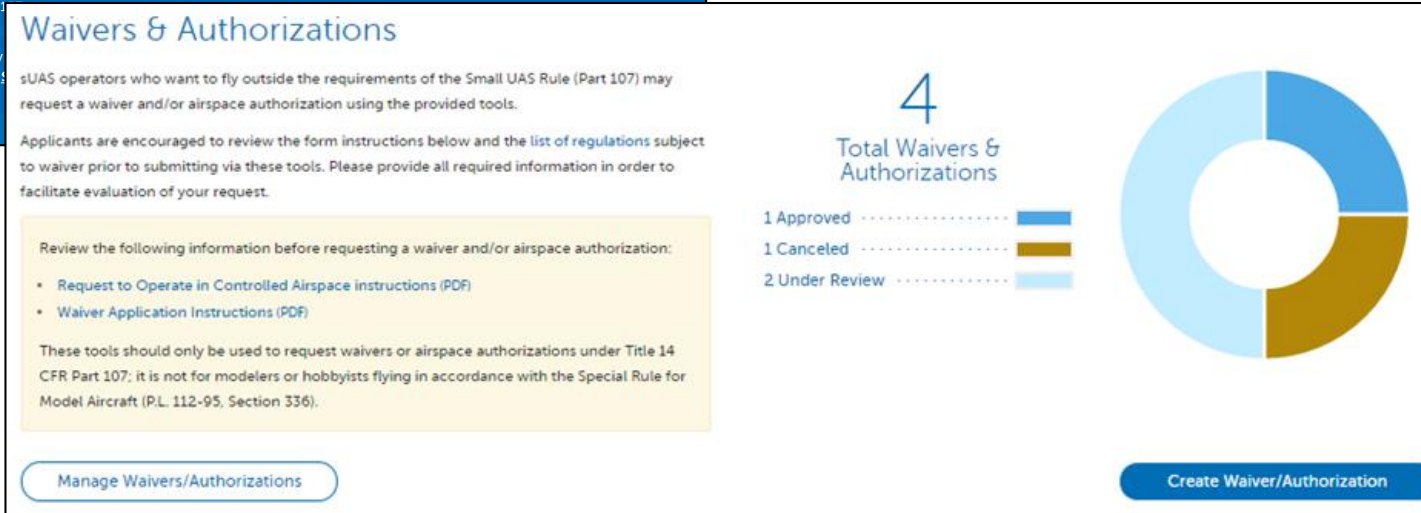
Register

Fly Model Aircraft under Section 336

I need to register my model aircraft under the requirements of the Special Rule for Model Aircraft (P.L. 112-95, Section 336).

Primary portal for small UAS needs

- Registration
- Airspace Authorizations & Waivers
- Operational Waivers
- Accident Reporting
- CBO Recognition (planned for late 2020)



Waivers & Authorizations

sUAS operators who want to fly outside the requirements of the Small UAS Rule (Part 107) may request a waiver and/or airspace authorization using the provided tools.

Applicants are encouraged to review the form instructions below and the [list of regulations](#) subject to waiver prior to submitting via these tools. Please provide all required information in order to facilitate evaluation of your request.

Review the following information before requesting a waiver and/or airspace authorization:

- [Request to Operate in Controlled Airspace instructions \(PDF\)](#)
- [Waiver Application Instructions \(PDF\)](#)

These tools should only be used to request waivers or airspace authorizations under Title 14 CFR Part 107; it is not for modelers or hobbyists flying in accordance with the Special Rule for Model Aircraft (P.L. 112-95, Section 336).

Manage Waivers/Authorizations

4 Total Waivers & Authorizations

1 Approved
1 Canceled
2 Under Review

Create Waiver/Authorization



Status of Rulemaking Efforts

Name of Rule	Stage	Status
External Marking Requirement for Small Unmanned Aircraft https://www.regulations.gov/docket?D=FAA-2018-1084	Interim Final Rule	In effect
Operations of sUAS Over People https://www.regulations.gov/document?D=FAA-2018-1087-0001	NPRM	949 comments - Finalized with rule for Remote ID
Safe and Secure Operations of Small UAS https://www.regulations.gov/docket?D=FAA-2018-1086	ANPRM	1842 comments
Remote Identification https://www.regulations.gov/document?D=FAA-2019-1100-0001	NPRM	53,040 comments
Type Certification of Unmanned Aircraft Systems https://www.regulations.gov/document?D=FAA-2019-1038-0001	Notice of policy	67 comments
UAS Flight Restrictions Near Critical Infrastructure	Draft NPRM	Estimate publication Feb 21
Modernization of the Special Airworthiness Certification (MOSAIC)	Draft NPRM	Development is underway



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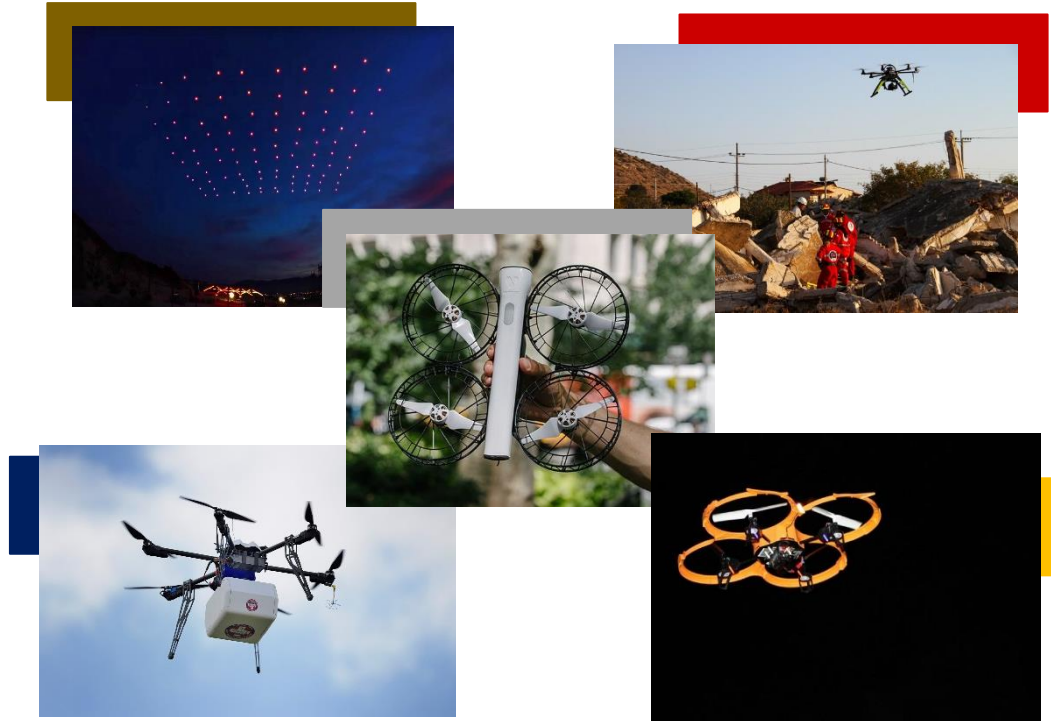


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Where there's a will,
there's a waiver



Part 107 Waivers



- **Waivers are submitted in the DroneZone and must carefully, clearly, and concretely show how the proposed operation can be conducted safely**
 - Reading and responding to all the questions in the Waiver Safety Explanation Guidelines is an essential to a successful waiver application
- **The FAA has a webinar series that outlines useful tips and tools for applying for waivers, available on the FAA website.**



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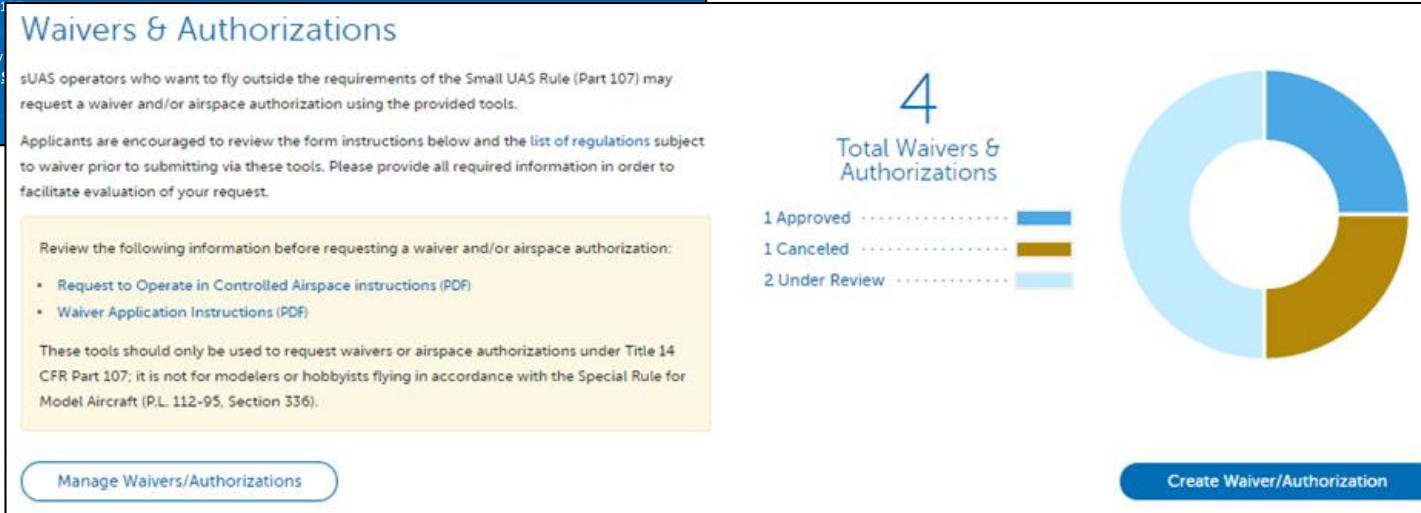
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Airspace & Authorizations

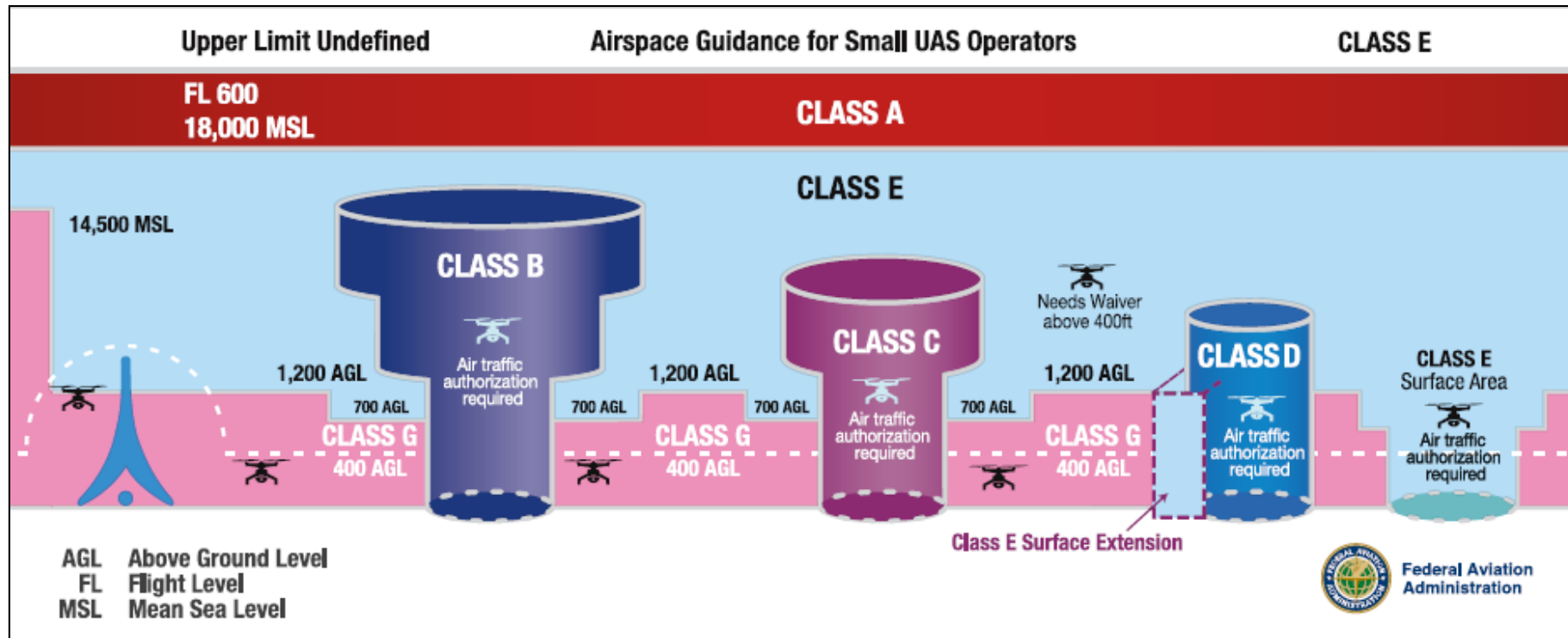


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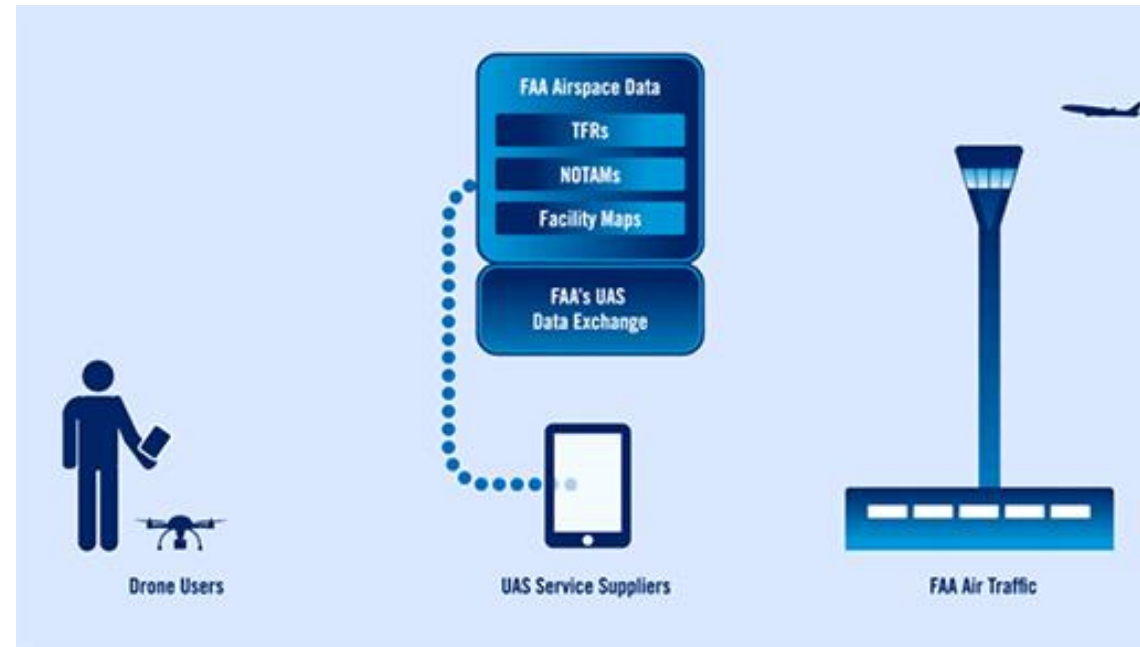
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Part 107 Airspace Requirements



- Operations in Class G and Class E non-surface do not require ATC authorization
- Operations in Class B, C, D & Class E surface areas require ATC authorization
- Online portal available at the FAA DroneZone and through LAANC

Low Altitude Authorization and Notification Capability (LAANC)



Goals

- Enable efficient notification and authorization services to small UAS operators
- Provide the data exchange framework for UAS traffic management (UTM)



<https://www.faa.gov/UAS/>

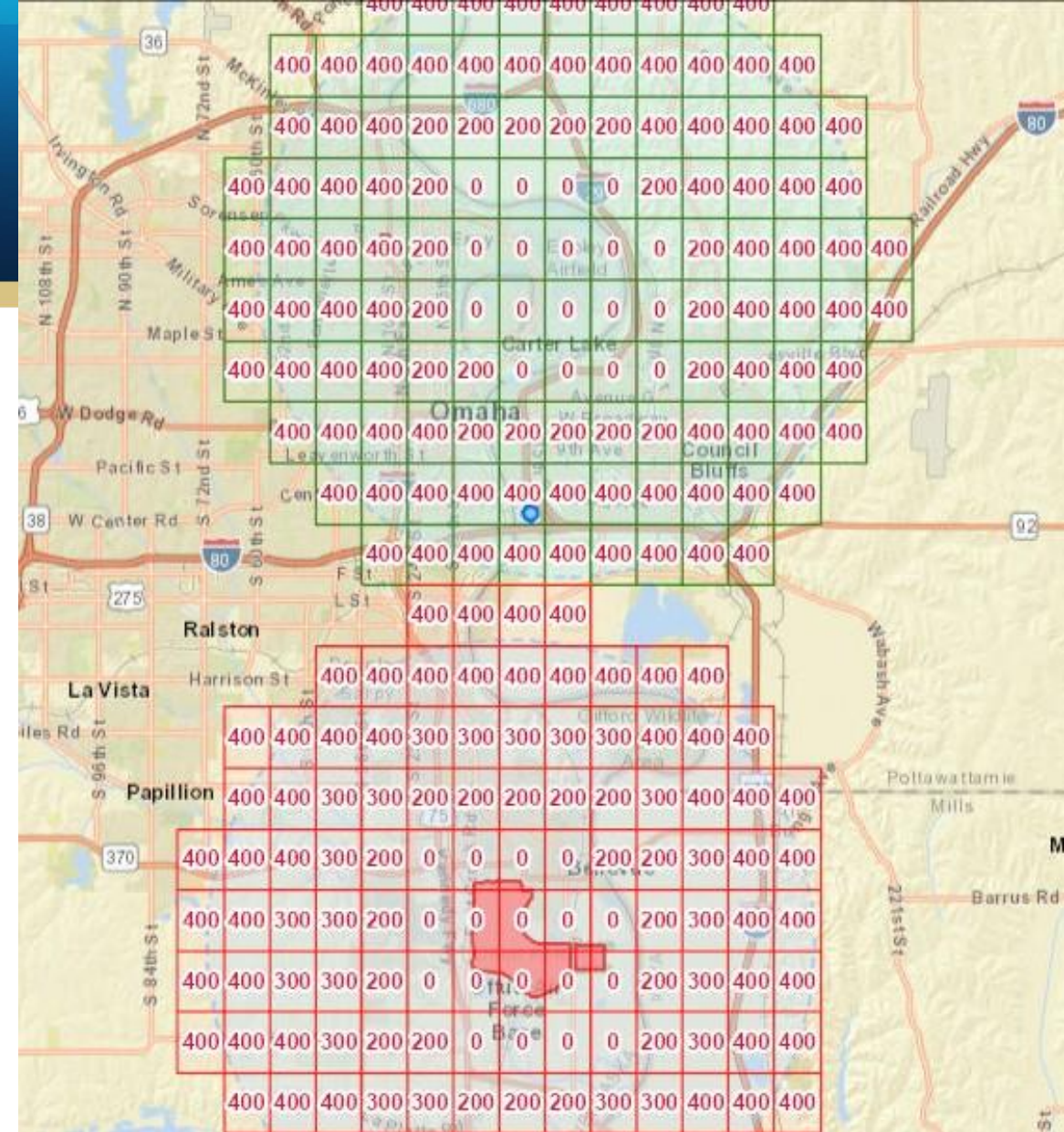
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UAS Facility Grid Maps


- Source data for LAANC
- Not automatic approval or denial of listed altitudes
- Green = LAANC available
- Red = LAANC not available
 - Enhanced service - may not be ready, if not....



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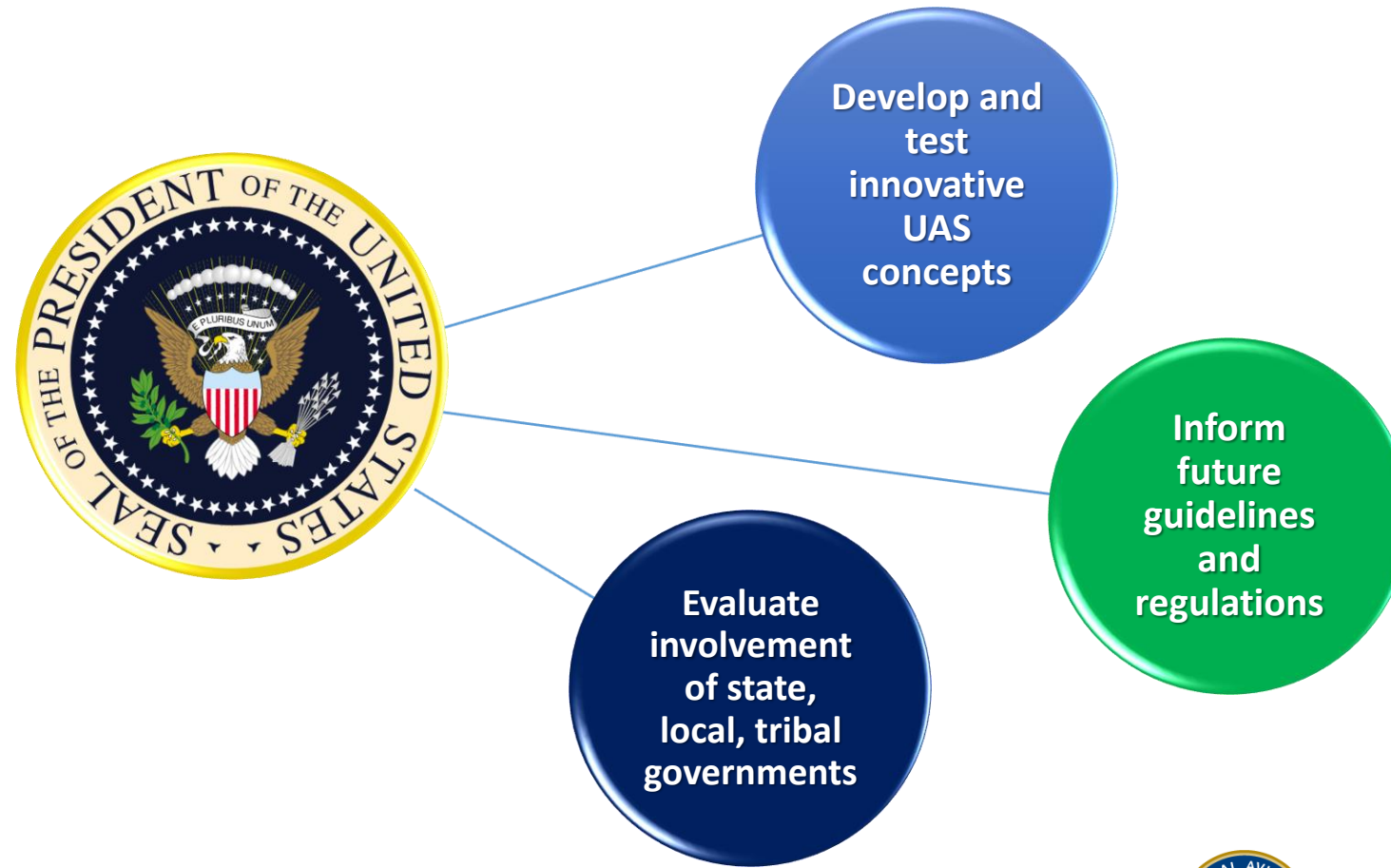


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UAS Integration Pilot Program (IPP)



<https://www.faa.gov/UAS/>

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IPP At a Glance

- **Operational Concepts**
 - Night Ops
 - Ops Over People
 - BVLOS
 - UTM
 - ID, Tracking & Counter UAS
 - Expand Industry Applications
 - Package delivery (Certified Operators)
- More than **11,150 total flights**
- Informing new UAS rules, policy and guidance

**UA captured
flooding images in
Grand Forks, ND**



<https://www.faa.gov/UAS/>

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UAS Lead Participants at a Glance

Operation Type

* Grey inner shading denotes planned operations

-  UAS Type Certificate
-  Delivery Operations
-  Multi-UAS
-  Infrastructure/Inspection
-  BVLOS
-  Agriculture
-  Ops Over People



Lead Participants



University of
Alaska-Fairbanks



City of San Diego



City of Reno



North Dakota
DOT



Kansas DOT



Choctaw Nation



Memphis-Shelby
County Airport
Authority



Innovation and
Entrepreneurship
Investment Authority



North Carolina
DOT



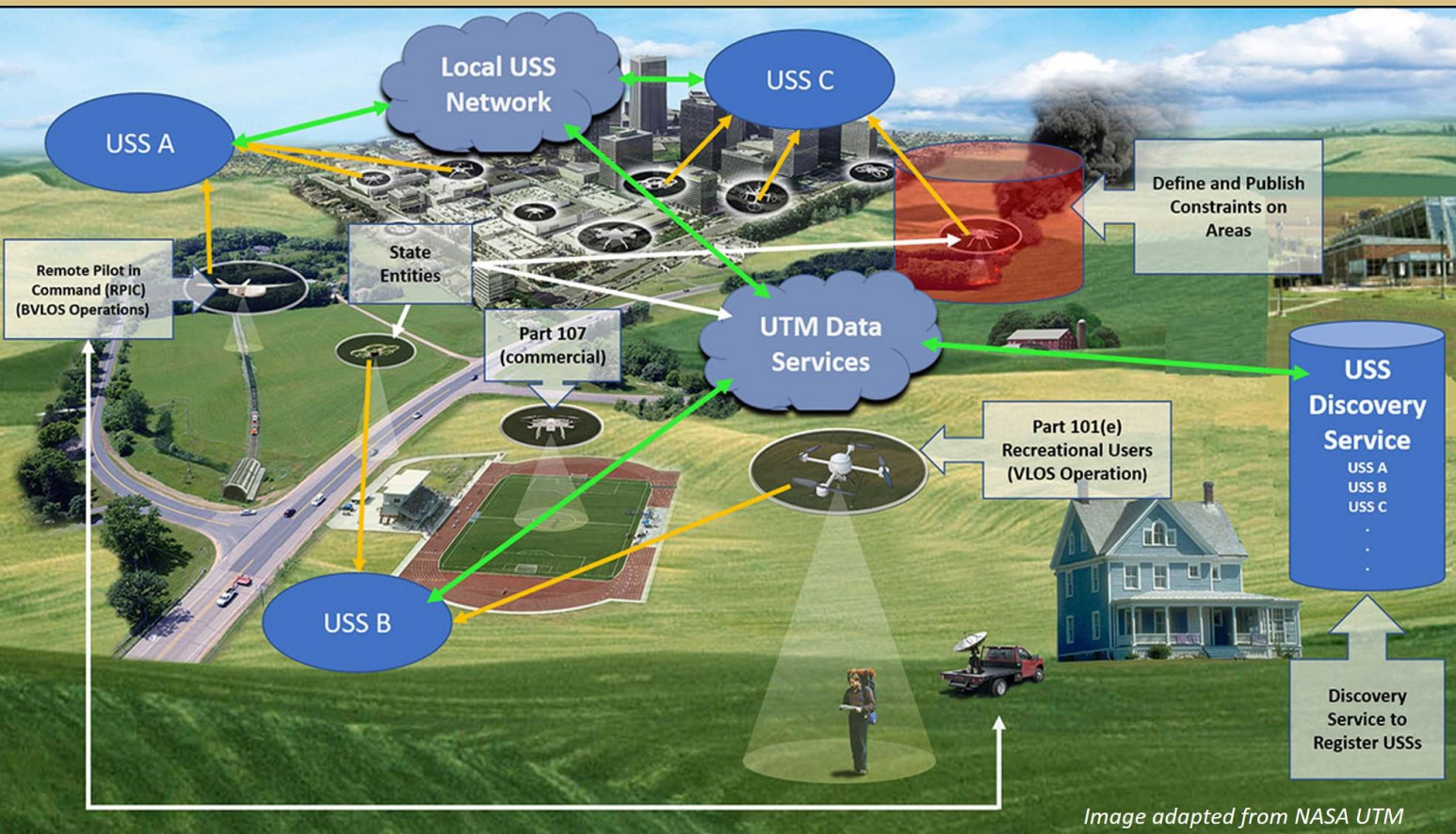
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FAA UAS Traffic Management



Suite of Capabilities:

- LAANC
- Remote ID
- Registration
- Dynamic Airspace



UTM Pilot Program (UPP) Overview

- The UPP focuses on
 - The information exchange between:
 - UAS Operator and UAS Service Supplier (USS), USS and FAA systems, USS and other USSs, and Supplemental Data Service Providers (SDSPs) and USSs
 - Creation and dissemination of UAS Volume Reservations (UVR) to provide dynamic airspace alerts to UAS operators



UTM 2.0 Tenets

- How FAA will support operations for UAS operating in low altitude airspace
- Uses industry's ability to supply services under FAA's regulatory authority where these services do not currently exist
- Community-based, cooperative traffic management ecosystem



UTM 2.0 Tenets (cont'd)

- Operator-Operator and Operator-FAA communication is primarily through a distributed information network
- FAA makes real-time airspace constraints available to UAS Operators
- FAA has on-demand access to UTM operational information when needed
- UAS Service Suppliers provide services to:
 - Support the UAS community
 - Connect Operators and other entities to enable information flow across the USS network
 - Promote shared situational awareness among UTM participants
- UTM Operators are responsible for:
 - Meeting the requirements established for the type of operation and associated airspace volume/route where they operate, and
 - Complying with all FAA regulations.



Ongoing Other Programs

- Advanced Air Mobility (aka UAM)
- UAS Center of Excellence – ASSURE
- UAS Test Sites
- UAS Security – airspace restrictions
- 2018 Reauthorization Act implementation
 - Recreational Users
- Outreach & STEM AVSED
- Industry Collaboration – DAC, UAST, PSP
- International Harmonization



Questions & Discussion



UAS Website

www.faa.gov/uas

UAS Helpdesk

UAShelp@faa.gov

844-FLY-MY-UA

Local FSDO



<https://www.faa.gov/UAS/>

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