

UAS UNMANNED
AIRCRAFT
SYSTEMS



**Federal Aviation
Administration**

AUVSI

- **What is a waiver?**

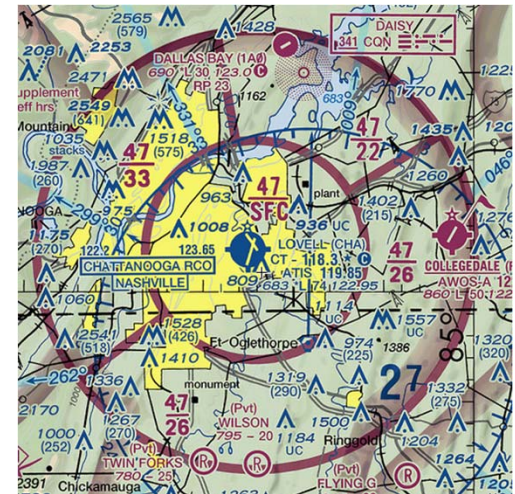
- A Waiver is an official document issued by the FAA which authorizes certain operations of aircraft outside the limitations of a regulation, but under conditions ensuring an equivalent level of safety
- *Not an airspace authorization*



US Department of Transportation
Federal Aviation Administration

**APPLICATION FOR
CERTIFICATE OF WAIVER
OR AUTHORIZATION**

- **What is an airspace authorization?**
 - Authorization
 - Part 107 (§107.41) requires that you have an authorization from Air Traffic Control prior to operating in Class B, Class C, Class D, or surface area of Class E airspace
 - For UAS, authorizations are processed through:
 - DroneZone (faadronezone.faa.gov)
 - Third party apps offering the Low Altitude Authorization and Notification Capability (LAANC)



- **What does that mean for drone operators?**

- Operational Waiver

- The authorized method in which you will operate your UAS while deviating from a regulation

- Authorization

- Your permission to fly in a specified segment of airspace *while still following all the rules*



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**APPLICATION FOR
CERTIFICATE OF WAIVER
OR AUTHORIZATION**

Remember, waivers are not:

- Guaranteed
- Automatic
- Permanent



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**APPLICATION FOR
CERTIFICATE OF WAIVER
OR AUTHORIZATION**

You want to...	Part 107 Regulation You Need a Waiver From
Fly a UAS from a moving vehicle or aircraft	§ 107.25 – Operation from a Moving Vehicle or Aircraft
Fly a UAS at night	§ 107.29 – Daylight Operation
Fly a UAS beyond your visual line-of-sight	§ 107.31 – Visual line of sight aircraft operation
Use a visual observer without following all visual observer requirements	§ 107.33 – Visual Observer
Fly multiple UAS per remote pilot	§ 107.35 – Operation of Multiple Small UAS
Fly a UAS in close proximity to other aircraft	§ 107.37(a) – Yielding the Right of Way
Fly a UAS over a person/people	§ 107.39 – Operation over People
Fly a UAS: <ul style="list-style-type: none"> • At a speed of over 100 mph • Over 400 feet above ground level • With less than 3 statute miles visibility • With less than the required standoff distance from clouds 	§ 107.51 – Operating Limitations for Small Unmanned Aircraft: § 107.51(a) § 107.51(b) § 107.51(c) § 107.51(d)

**Submit
Request**

- [FAADroneZone.faa.gov](https://faa.gov/uaa/dronezone)
- Use Waiver Safety Explanation Guidelines
- Reference # assigned (check DroneZone account)

**FAA Received
Request**

- Waiver application is assigned to an analyst

**FAA Evaluates
Request**
~ 17 days

- FAA Safety analysis and review
- Request for additional information (RFI)
- Management Review


**Waiver
Decision**
~ 2 days

- Approval or Denial sent to applicant
- Approvals published on website, denials include explanation

Intake through review/signature avg. \leq 30 days (depends on complexity)

- **Submit your application as soon as possible**
 - Submit application at least 90 days prior to the start of the proposed operation
 - This does not mean it will take 90 days to approve!
 - Time required to make a determination regarding waiver or authorization requests will vary based on the complexity of the request
 - A waiver may be valid between 1 day and 4 years


FAADroneZone.faa.gov


Federal Aviation Administration

[LOG IN](#) | [CONTACT](#)

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 small unmanned aircraft to fly with an aero-modeling club and following all requirements of the **Special Rule for Model Aircraft**.

[Register](#)

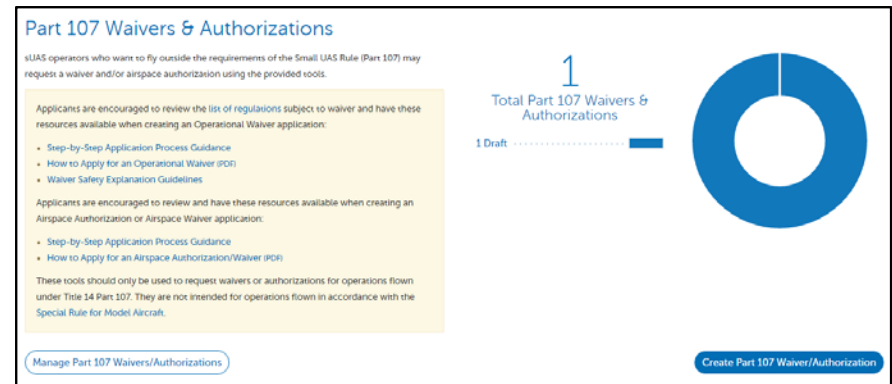
Already registered? [Log In](#) to your existing account.

For general information about drones, [rules for flying](#), and how to [become a drone pilot](#), visit the [FAA website](#).

[Register a drone that weighs 55 lbs. or more.](#)

- **Centralized hub for small UAS operators**

- Part 107 Waivers
- Part 107 Airspace Authorizations
- Small UAS Registration
 - Civil sUAS under Part 107
 - Civil sUAS under Part 101
 - *Note: to apply for a waiver, you must create a Part 107 account*
- Accident Reporting
- Guidance



- **Waiver Safety Explanation Guidelines**

- Helpful risk analysis tool in your waiver application submission
- Step-by-step guidance in assisting you with entering necessary data

Federal Aviation
Administration**Waiver Safety Explanation Guidelines for
Part 107 Waiver Applications**

• Waiver Application Instructions

- Apply for only what you *need*
- Waiver should only be submitted once 100% complete
- Ensure you've addressed the Waiver Safety Explanation Guideline (WSEG) questions



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Waiver Application Instructions

Tips for a Successful Waiver Request

- Only select the Part 107 Regulations that **need to be waived** in order to perform the proposed operation;
- Thoroughly read and address the Waiver Safety Explanation Guidelines;
- Be prompt in responding to the FAA when asked for additional information.
 - Delays in responding to inquiries could cause delays in processing your request.
 - No response after 30 days will cause your request to be withdrawn.
- The FAA encourages applicants to submit applications at least 90 days prior to the start of the proposed operation. The FAA will strive to complete the review and resolution of waivers within 90 days; however, the time required for the FAA to make a determination will vary based upon the complexity of the request.

- **Quality vs. Quantity**

- 15,000 character limit

- In Step 2 (Waiver Application)

0/15000 characters.

Add Attachment

- Attachments may be added

- In Step 4 (Review)
- Note your attachment in Step 2 (Waiver Application)
- 5 attachments allowed (20mb each)



- **Quality vs. Quantity**

- Quality of your justification is more important than the quantity of characters
- Include all data from your risk analysis
 - Hazards identified
 - Assessment of risk
 - Mitigation strategies

0/15000 characters.

Add Attachment



- **Quality vs. Quantity**

- Don't assume we know what you mean
- Cannot leave things to “common sense”

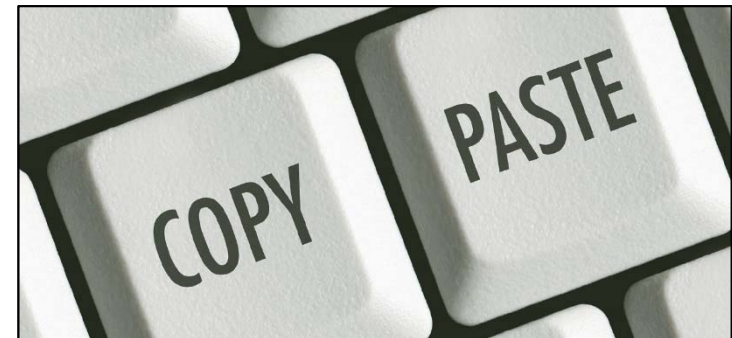
0/15000 characters.

Add Attachment



- **Quality vs. Quantity**

- Imitation is not a sincere form of flattery when applying for a waiver
- ‘Copy ‘n Paste’ applications are easy to spot
 - Mitigations are not appropriate to your operation
- Usually contain errors



- **What vs. How**

- What:

- “The VO will notify the Remote Pilot of any hazards.”

- How

- Two-Way Radio?
 - Cellphone?
 - Earpiece?



- **What vs. How**

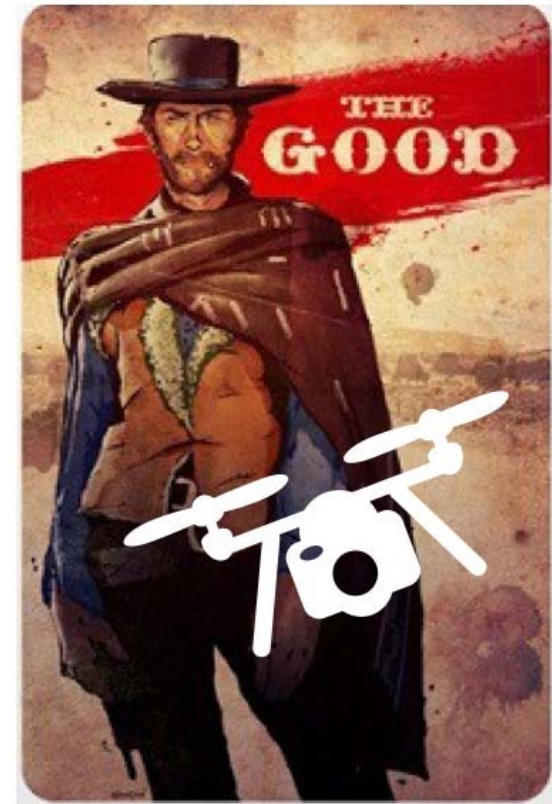
- Generally speaking, operators submit applications with the ‘what’ answered:
 - *“My UAS will be equipped with lights.”*
- The ‘how’ (method) is lacking:
 - *“My UAS will have ACME, Inc. lighting installed, visible for at least 3 miles and color coded to provide visual direction-of-flight information to the Remote Pilot.”*



Daylight Waiver (107.29)

Waiver Text

“Crew members not next to the RPIC will use non-aviation frequency two-way devices to ensure communications.”



Daylight Waiver (107.29)

Why it Works

- *“... non-aviation frequency two-way devices ...”*
 - Identifies equipment
 - Details how RPIC will remain informed
- *“...not next to the RPIC...”*
 - Clarifies which individuals will carry the equipment

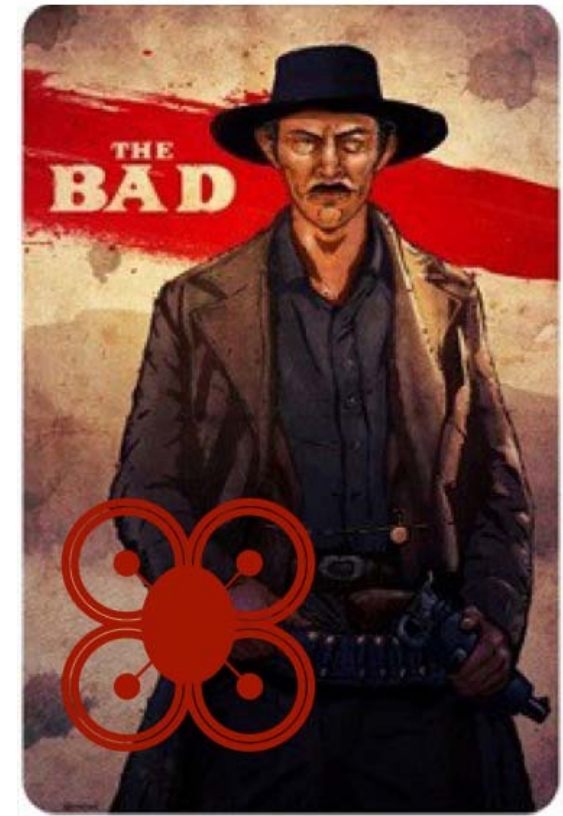
“Crew members not next to the RPIC will use non-aviation frequency two-way devices to ensure communications.”



VLOS Waiver (107.31)

Waiver Text

“I will use advanced systems with video feeds to keep track of the UAS without actually seeing it.”

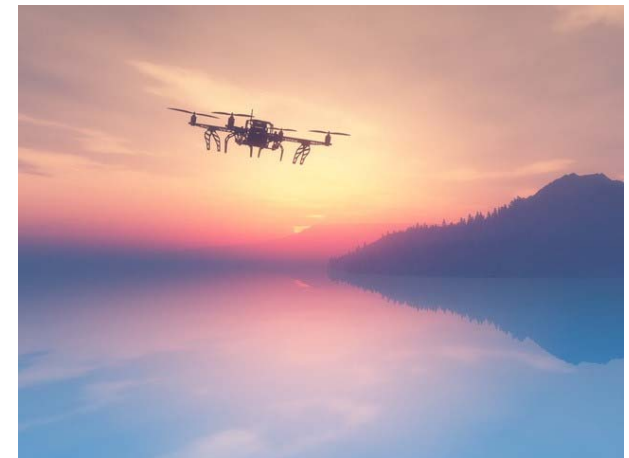


VLOS Waiver (107.31)

Why it Does Not Work

- “...advanced systems...”
 - What are those?
 - How do they work?
- “...keep track of the UAS...”
 - How will you detect and avoid other aircraft?
 - How will you yield right-of-way when operating BVLOS

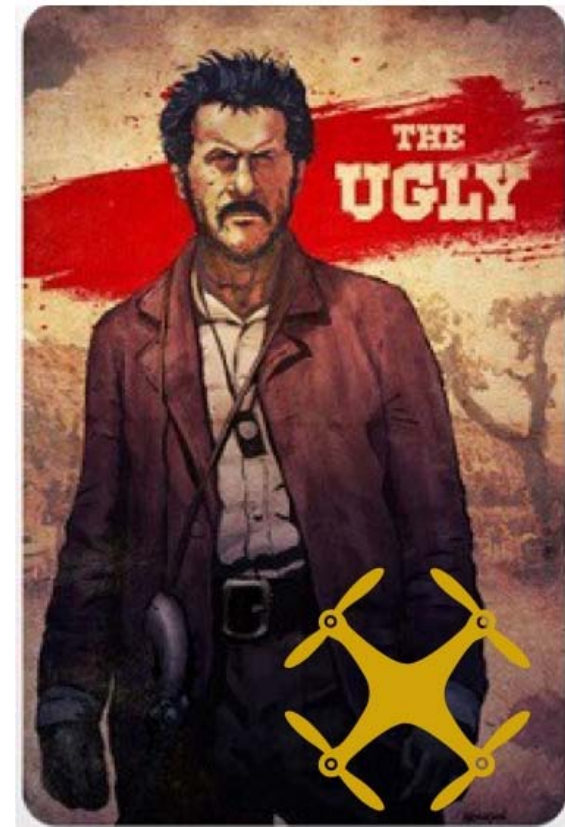
“I will use advanced systems with video feeds to keep track of the UAS without actually seeing it.”



Daylight Waiver (107.29)

Waiver Text

*“I’m doing this just for fun
and will remain below the
tree tops.”*



Daylight Waiver (107.29)

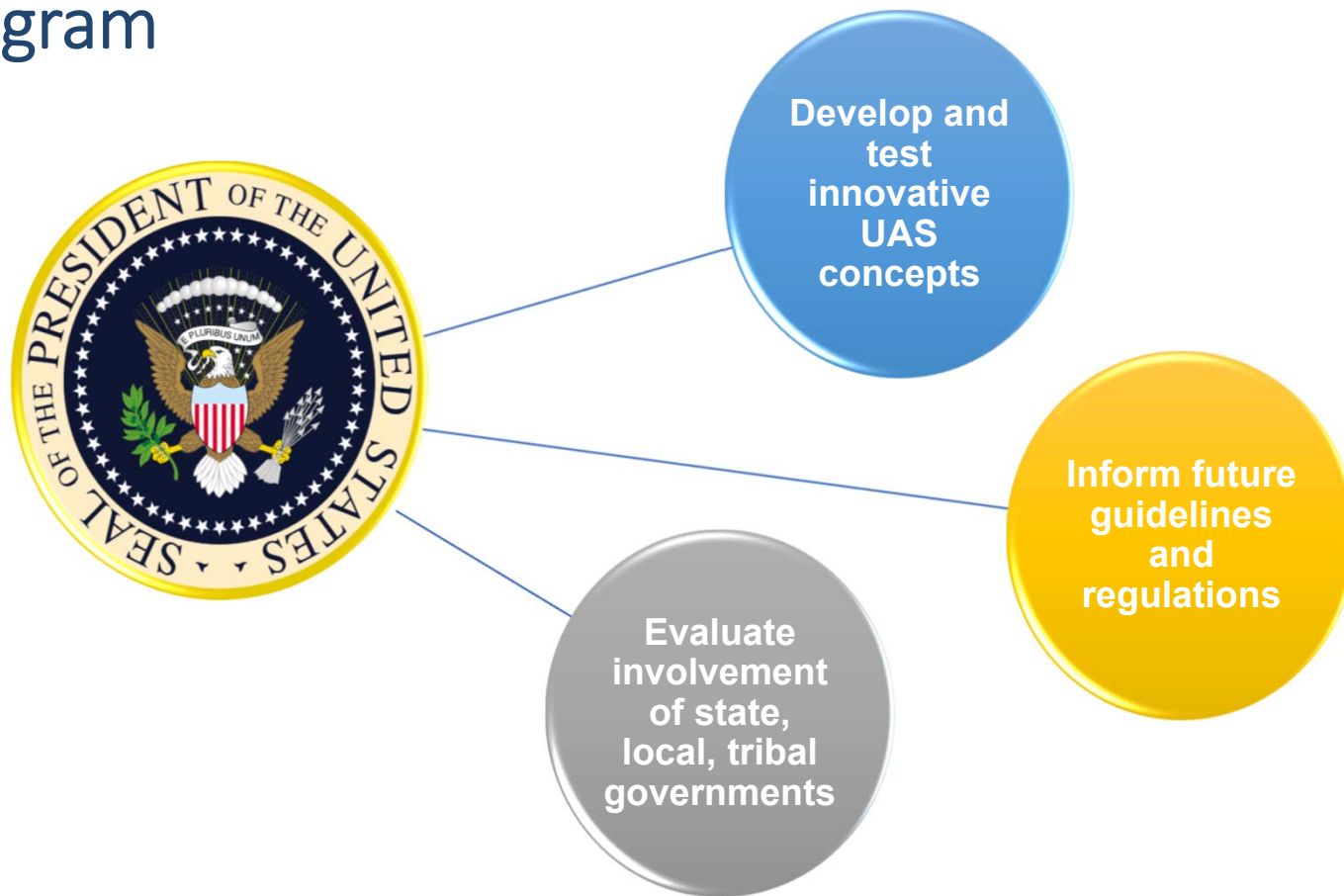
Why it Does Not Work

- “...just for fun...”
 - Does not make a Safety Case
 - Does not provide a risk assessment
- “...remain below the tree tops.”
 - Trees are varying in height
 - Simply remaining below a structure may not sufficiently mitigate risk

*“I’m doing this just for fun
and will remain below the
tree tops.”*



UAS Integration Pilot Program



UAS In

Oct 25, 2017

- Presidential Memorandum issued

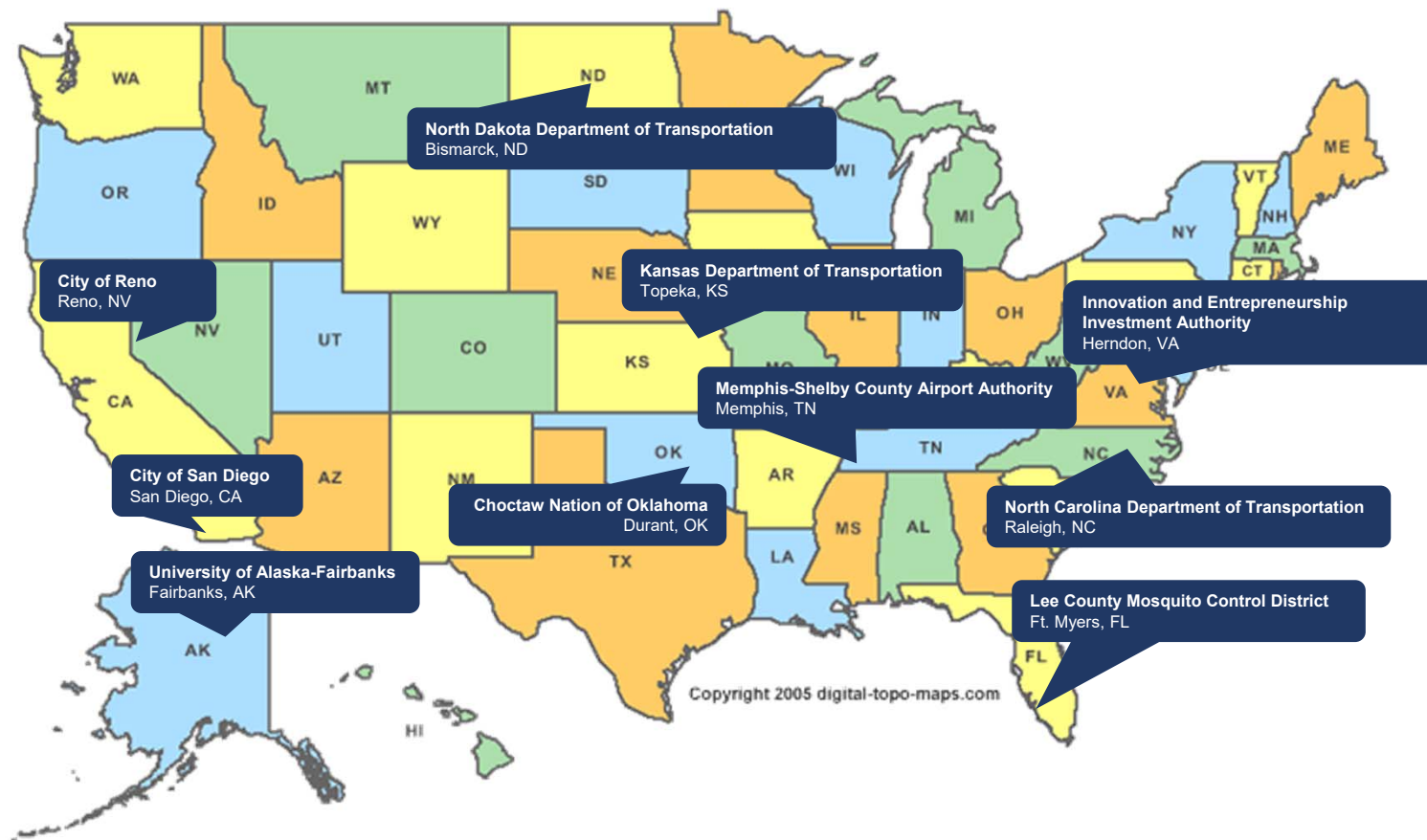
May 9, 2018

- 10 awardees announced by Secretary Chao

August 2018

- Initial operations intended to be complex and push the envelope towards full UAS integration
- Technology innovations include remote ID, system communications, avoidance of people and property, and UAS airworthiness





UAS IPP Participants



UAS IPP

Presidential Memorandum Milestone		Status
Establish UAS Integration Pilot Program (UAS IPP)	✓	UAS IPP established November 8, 2017 via Federal Register Notice
Solicit Proposals from State, Local, and Tribal Governments	✓	Screening Information Request (SIR) published November 8, 2017
Enter into Agreements with at least Five Selected Governments	✓ ✓ ✓	Ten Government entities selected May 3, 2018 Award announcement May 9, 2018 MOAs executed with Selectee Governments May 18, 2018
Selected Governments Begin Integration of UAS into the NAS	✓	Eight of the 10 Selected Governments conducted initial operations prior to August 31, 2018
Use Existing Authorities to Grant Exemptions, Authorizations, and Waivers from FAA Regulations	✓ ✓	Four airspace authorizations approved Nine part 107 operational waivers issued
Submit an Annual Report to the President	✓	Targeting submittal in October 2018

UAS

Choctaw Nation <ul style="list-style-type: none">• Agricultural management• BVLOS, delivery, ops over people 	City of San Diego <ul style="list-style-type: none">• Package delivery• International commerce and border security 	Innovation & Entrepreneurship Investment Authority (VA) <ul style="list-style-type: none">• Package delivery• Infrastructure inspection	Kansas DOT <ul style="list-style-type: none">• Infrastructure inspection• Precision agriculture 	Lee County Mosquito Control District <ul style="list-style-type: none">• Aerial inspection• Spraying larvacide, herbicide
Memphis-Shelby County Airport Authority <ul style="list-style-type: none">• Aircraft inspections• Security monitoring	North Carolina DOT <ul style="list-style-type: none">• Medical package delivery, urban and remote areas	North Dakota DOT <ul style="list-style-type: none">• Energy distribution line inspection• Media and emergency response	City of Reno <ul style="list-style-type: none">• Medical package delivery• BVLOS 	University of Alaska, Fairbanks <ul style="list-style-type: none">• Pipeline surveillance• Long distance BVLOS

Thank You!

