

# Integrating Unmanned Aircraft Systems into the National Airspace System

Presented by:

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# Federal Gov't UAS Policymaking

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## **FAA Rulemaking Process**

- Safety and operations: Pilot licenses, airworthiness, operator certificates, flight rules
- Proposed rule Feb. 15

## **Federal Interagency Process**

- Privacy, transparency, accountability, civil rights / civil liberties
- WH Presidential Memorandum, released Feb. 15

## **Agency-Specific Processes**

- Department of Justice, Department of Homeland Security



# Permitted Model Aircraft Flights

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## **UAS use generally permitted if:**

- UAS flown “strictly for hobby or recreational use”
- Operated in accordance with a community-based set of guidelines
- UAS weighs under 55 pounds unless otherwise certified
- UAS flown within Visual Line-of-Sight
- UAS operated in a manner that does not interfere with and gives way to manned aircraft
- UAS operator provides notice to air traffic controllers if it is operated within 5 miles of an airport



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# FAA Notice of Proposed Rulemaking

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- February 15, 2015: NPRM Publicly Released
- February 23, 2015: NPRM Opened for Comment
- April 24, 2015: Comment Period Closed
- Now: FAA Conducts Analysis and Internal Review of Comments
- Late 2016 / Early 2017: Release of Final Rule expected

# FAA Notice of Proposed Rulemaking

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## HIGHLIGHTS:

- UAS Operators Certificate: no pilot's license required
- sUAS must be < 55lbs. (25kg)
- Must maintain visual line-of-sight (VLOS)
- Maximum altitude/speed: 500 feet/100mph
- Flown away from people



# FAA Notice of Proposed Rulemaking

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## HIGHLIGHTS:

- Airspace restrictions - most require ATC permission
- Registration and marking of aircraft required
- No airworthiness certification required
- Visual Observer not required
- FAA requested comment:
  - Broad exemptions for micro-drones 4.4 lbs or less?

## UAS KNOWLEDGE TEST:

- In lieu of flight proficiency demo / aeronautical experience
- Recurrent tests every 24 months
- An applicant for the operator certificate would need to:
  - Be at least 17 years of age, able to read / understand English
  - Pass knowledge test, covering issues such as:
    - UAS regulations
    - Airspace classifications and flight restrictions
    - Obstacle avoidance and weather effects
    - How to respond to an emergency
    - Aeronautical decision making and crew resource management
    - Effects of drugs or alcohol

## **Medical Certification and TSA Check:**

- Operators must self-certify, at the time of application, that they do not have a medical condition that could interfere with the safe operation of a small UAS
- FAA will verify compliance and accuracy of application and provide information to TSA for security vetting prior to certificate issuance
- FAA may deny an operator certificate application or take other certificate action for violations of federal or state drug laws



# Visual Line of Sight (VLOS)

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## **VISUAL LINE OF SIGHT REQUIRED:**

- Aviation law based on concept of “see and avoid”
- UAS regulations don’t yet allow for “sense and avoid”
- Operator must be able to see the aircraft at all times;  
Beyond Line of Sight (BLOS) not permitted
  - NOTE: FAA Pathfinder Program designed to research what technologies will make BLOS operations possible
- FAA leaves open use of First Person View (FPV) tech in future, but believes reliability issues must be resolved first

# Operational Restrictions

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## **OPERATIONAL RESTRICTIONS:**

- Maximum take-off weight 55 pounds
- Maximum air speed 87 knots (100 MPH)
- Flights only permitted in daylight
- Minimum visibility 3 miles
- Must keep no less than 500 feet below clouds and 2,000 feet horizontal separation from clouds
- UAS must always yield right-of-way to other aircraft

# Operational Restrictions

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## **OPERATIONAL RESTRICTIONS:**

- UAS cannot be operated in a careless or reckless manner
- Objects cannot be dropped from the UAS if it causes a hazard to persons or property on the ground
- You cannot fly directly over persons:
  - Select an operational area that is clearly unpopulated or uninhabited
  - Establish an operational area that the operator has taken reasonable precautions to keep free of persons not involved in the operation



# Stronger Opposition to Drone Surveillance

	Monitor streets and businesses?	Enforce traffic laws?
Ground Cameras	24%	34%
Drone Cameras	46%	53%

Source: Kerry G. Herron, Ph.D., Hank C. Jenkins Smith, Ph.D., and Carol L. Silva, Ph.D., "US Public Perspectives on Privacy, Security, and Unmanned Aircraft Systems," *Center for Risk and Crisis Management*, University of Oklahoma (March 2014)

## White House Presidential Memorandum

- FAA handles safety, operational and licensing issues; not privacy issues
- WH Presidential Memorandum released February 15, 2015:
  - Federal Government UAS Use: Establishes privacy, transparency, civil rights and accountability protections on federal government's own use of UAS
  - Commercial UAS Use: Establishes Executive Branch multi-stakeholder process to craft privacy, transparency and accountability best practices for commercial use of UAS

## SCOPE OF NTIA PROCESS: What's at Stake?

- **Privacy:**
  - Collection, retention, use and dissemination of data
  - Is there a risk that third-party data and images will be captured?
  - If so, how will they be stored and handled?
- **Transparency:**
  - Notice to the public regarding UAS use and relevant policies
- **Accountability:**
  - How will organizations enforce their privacy protocols internally?  
Can trade associations help?



# Contact Information

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If you have any questions, please contact me:

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