Unmanned Aircraft
Policy, Operations, Integration

Public Works Roundup
July 16, 2015
What are Unmanned Aircraft Systems?

• Control station
• Data links
• Telemetry
• Communications, navigation
• Control, sensor operators

Source: FAA
High Altitude Long Endurance

Medium Altitude Long Endurance

Small Unmanned Aircraft System

Micro Unmanned Aerial Vehicle

Formation Flight
Example Applications

Transportation
• Accident Recreation
• Asset Management

Public Safety
• Missing Persons
• Disaster Response
• Police Force Multiplier

Environment
• Agriculture
• Conservation
• Weather Monitoring

Surveys/Inspections
• Utility Pipelines
• Cargo Trains, Passenger Rail Lines
• Construction
Real Estate, News/Media, and more…
Hobbyists

Authorized UAS Operations Framework

Public Entity/COA

Private/For Hire*

*Limited approval through exemption process or special airworthiness certificate.
Federal Policy, Guidance Examples

• FAA Modernization and Reform Act of 2012 (FMRA)
  Subtitle B: Unmanned Aircraft Systems (Sections 332-336)

• FAA Guidance for Law Enforcement

• Temporary Flight Restrictions for Sporting Events

• Presidential Memorandum: Promoting Economic Competitiveness While Safeguarding Privacy, Civil Rights, and Civil Liberties in Domestic Use of Unmanned Aircraft Systems

Source: FAA UAS Regulations & Policies
State of Texas Privacy Act

Examples of Lawful UAS Imagery Capturing

Professional, scholarly research

FAA UAS test site airspace

Operation, exercise, or mission of any branch of US military

Consent of real property owners/occupants

By law enforcement authorities

Source: National Conference of State Legislatures
Local, State UAS Initiatives

- Texas A&M Corpus Christi Texas UAS Test Site
- University of Texas at Arlington Research Institute
- University of North Texas
- City of Arlington Police Department
- Center for Innovation Unmanned Systems Consortium
- Mineral Wells, NCTCOG, other regional partners...

Source: Lone Star UAS Center of Excellence and Innovation (LSUASC)
Regional Significance

- Privacy
- Airspace obstructions
- Lack of uniform rules, control
- Notification requirements
- Activity tracking
- Operator training, education
Coordination for Integration

ATTAC Concerns

Privacy
Notification, approval
Operator training/education
Conflict with manned aircraft

Source: ATTAC UAS Survey

NCTCOG Staff Actions

• Committee UAS Workshops – 2014/2015
• Develop online information clearinghouse www.nctcog.org/uas
• Draft regional guidance report
• Engage industry stakeholders
• Brief policy officials, coordination with FAA
Airspace Concerns

"FAA reports pilots have seen up to 25 cases per month of drones flying above the regulated limit of 400 feet, with some flying as high as 2,000 feet in the air." -CNN

October 2014: FAA investigates UAS crash in Dallas Love Field’s airspace. -NBC DFW
Key rules from FAA proposal for commercial drones

- Max speed: 100 mph
- Max weight: 55 lbs
- Max altitude: 500 ft.
- Fly during daylight only
- Rules don’t allow for drone deliveries as envisioned (sorry Amazon)
- Must be directly visible by operator
- Operator requirements:
  - At least 17 years old
  - Have passed initial, recurring tests
  - Obtain operating certificate
  - Vetted by TSA

Source: Federal Aviation Administration

Kyle Kim @latimesgraphics
Overview of Small UAS Notice of Proposed Rulemaking

Summary of Major Provisions of Proposed Part 107

The following provisions are being proposed in the FAA’s Small UAS NPRM:

Operational Limitations

- Unmanned aircraft must weigh less than 55 lbs. (25 kg).
- Visual line-of-sight (VLOS) only; the unmanned aircraft must remain within VLOS of the operator or visual observer.
- At all times the small unmanned aircraft must remain close enough to the operator for the operator to be capable of seeing the aircraft with vision unaided by any device other than corrective lenses.
- Small unmanned aircraft may not operate over any persons not directly involved in the operation.
- Daylight-only operations (official sunrise to official sunset, local time).
- Must yield right-of-way to other aircraft, manned or unmanned.
- May use visual observer (VO) but not required.
- First-person view cameras cannot satisfy “see-and-avoid” requirement but can be used as long as requirement is satisfied in other ways.
- Maximum airspeed of 100 mph (87 knots).
- Maximum altitude of 300 feet above ground level.
- Minimum weather visibility of 3 miles from control station.
- No operations allowed in Class A (18,000 feet & above) airspace.
- Operations in Class B, C, D and E airspace are allowed with the required ATC permission.
- Operations in Class G airspace are allowed without ATC permission.
- No person may act as an operator or VO for more than one unmanned aircraft operation at one time.
- No careless or reckless operations.
- Requires preflight inspection by the operator.
- A person may not operate a small unmanned aircraft if he or she knows or has reason to know of any physical or mental condition that would interfere with the safe operation of a small UAS.
- Proposes a microUAS option that would allow operations in Class G airspace, over people not involved in the operation, provided the operator certifies he or she has the requisite aeronautical knowledge to perform the operation.

Operator Certification and Responsibilities

- Pilots of a small UAS would be considered “operators”.
- Operators would be required to:
  - Pass an initial aeronautical knowledge test at an FAA-approved knowledge testing center.
  - Be vetted by the Transportation Security Administration.

Aircraft Requirements

- FAA airworthiness certification not required. However, operator must maintain a small UAS in condition for safe operation and prior to flight must inspect the UAS to ensure that it is in a condition for safe operation. Aircraft Registration required (same requirements that apply to all other aircraft).
- Aircraft markings required (same requirements that apply to all other aircraft). If aircraft is too small to display markings in standard size, then the aircraft simply needs to display markings in the largest practicable manner.

Model Aircraft

- Proposed rule would not apply to model aircraft that satisfy all of the criteria specified in Section 336 of Public Law 112-95.
- The proposed rule would codify the FAA’s enforcement authority in part 101 by prohibiting model aircraft operators from endangering the safety of the NAS.
ATTAC Unmanned Aircraft Workshop

Date/Time: TBA (July or August)
NCTCOG Offices, Transportation Council Room

Discussion Topics
• Policy
• Integration recommendations
• Local-level planning strategies

Previous Workshop Materials at www.nctcog.org/attac.

More at: www.nctcog.org/uas
ATTAC Workshop: Unmanned Aircraft

Wednesday, April 1, 2015
10am – 12pm

Where: NCTCOG Offices, Council Room

Topics: Policy, FAA UAS rulemaking, local-level planning strategies, draft report

Attendees: Municipal staff, Industry Groups, Local Stakeholders

More at: www.nctcog.org/uas
Operator Outreach

- Operator resources
  - Government, Industry – FAA, AMA, AUVSI, Small UAV Coalition
  - Aircraft Owners & Pilots Association (AOPA)
Discussion/Questions

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