Ethical and Legal considerations operating drones in the USA

Introductory Webinar in the lead up to RDA 15th Plenary

J Wyngaard, University of Notre Dame
Overview

Note: I am not a lawyer, or even a drone operations expert. I fly drones for academic work and am working to make my data FAIR.

1. WELDD in Context
2. USA Drone Operation Laws in *brief (or we could skip this?)*
3. Ethical and Legal considerations regarding privacy in the USA Nationally
4. State and County level examples
5. Challenge as related to academics
WELDD in Context

- New RDA Working Group out of RDA sUAS Data IG (Not yet endorsed)
  - https://tinyurl.com/vnatnsu
- Working Group on Ethical and Legal best practices for Drone Data in a global research context (WELDD)
  - https://tinyurl.com/ubm6f51 (RDA WG Webpage and mailing list)
  - Still being chartered, contributions welcome: https://tinyurl.com/qnsyctn (gdoc)
- Target outcome:
  - Actionable recommendations regarding legal and ethical best practice for the use and publication of drone captured data for research purposes in the context of FAIR and Open Science
- Charter submission target at P15 session in Melbourne
FAA Drone Operations Law in brief

Note: This is still an evolving space and a moving target with a history

- From the FAA’s perspective the rules differ depending on flying:
  - For pay vs hobbyist
  - What airspace you’re in
  - The size of your vehicle
  - If you’re operating within ‘normal’ parameters or outside of them
- Your state, county, and institution may all have more to say on the subject
- Academics:
  - Usually students can fly as ‘hobbyist’ but Lectures/Professors/Technical Staff etc will be considered ‘commercial’ operators
FAA Drone Operations Law in brief

Basics for everyone (commercial and hobbyist)

- Size: 0.55lb (250g) < small Unmanned Aerial System [sUAS] < 55lb (25kg)
- No flying (without exemption or special considerations):
  - Beyond Visual Line of Site [BVLOS]
  - Above 400ft Above Ground Level [AGL]
  - Within 25ft of people and private property
  - Near stadiums, airports, or manned aircraft
  - Under the influence of alcohol or drugs
  - After dark
  - In swarms
  - In controlled airspace
  - From a moving vehicle
- All drones must be registered with the FAA: https://www.droneregistration.com/
FAA Drone Operations Law in brief: For hobbyists

- No sUAS pilot license required
- Drone must be registered with the FFA
- Follow a community-based set of safety guidelines (Eg AMA/Local club)
- Operate within an authorised airspace authorization to operate in controlled airspace (Eg contact local airport)
  - Use Low Altitude Authorization and Notification Capability (LAANC)

<table>
<thead>
<tr>
<th>Approved Service Supplier</th>
<th>Part 107 Near - Real Time Authorization</th>
<th>Part 107 Partner Coordination</th>
<th>Exception for Recreational Flying/Section 4600</th>
</tr>
</thead>
<tbody>
<tr>
<td>AeroNyx</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>AirWorks</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Airmap</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Airmaster</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>APROCOYS</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Altitude Angel</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Avionics</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Beline</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Colline Aerospace</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Converga</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Dornet</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Drone Up</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hamps Corporation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kittyhawk</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Project Weag</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SimuLink</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Skycracker</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Skyward</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Things Group</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Urbanbees</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Velocity</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

LAANC Apps

Know Before You Fly App
FAA Drone Operations Law in *brief*: For commerce

- Pilot must have a Part 107 License (register and pass a knowledge test)
- sUAS must be registered with the FAA
- Operate within the airspace you are authorized to operate within.
  - Use LAANC for under 400ft operation
  - Apply for a waiver to fly > 400ft operation or within otherwise controlled airspace, BVLOS or other low visibility conditions, multiple aircraft simultaneously, After Dusk, Directly over People, From a moving vehicle

**New:** FAA has requested comment on a proposal to require all drones have a digital ID. Find out more: FAA announcement and where to comment:
https://tinyurl.com/tvsv2z3
Legal and Ethical Privacy Considerations

- Points of consideration regarding data:
  - Collection
  - Retention
  - Use
  - Disclosure
  - Reuse/Publication/Safe destruction

- Points of consideration regarding operations
  - Flying over private property
  - FAA’s drone Network ID proposal has concerning requirements regarding drone pilot privacy

- Not considered:
  - Beliefs around drones (Eg non-industrialised communities)
  - Military or governmental uses of drones
Legal privacy nationally in the USA

- In courts it depends significantly on “individual expectations of privacy”
  - But those expectations are changing rapidly....

- FAA: currently takes the position that it doesn’t regulate data gathered by drones

- Local laws take precedence/currently fill the gap
Legal privacy nationally in the USA

- **Primary Commentators:**
  - UVASI's code of conduct: “respect the privacy of individuals.”
  - ACLU:
    - Calls out the potential violations of a government’s use of drones for surveillance
    - Calls out the need to protect civilian liberties to record information
  - NTIA: Voluntary Best Practices for UAS Privacy, Transparency, and Accountability
    - Is primarily about data that can uniquely identify an individual
    - These Best Practices **do not apply to newsgatherers** and news reporting organizations
Legal privacy nationally in the USA: NITA

- Voluntary Best Practices for UAS Privacy, Transparency, and Accountability
  - Distinguishes between Commercial, Hobby, and News users
- Practices
  - Inform Others of Your Use of UAS
  - Show Care When Operating UAS or Collecting and Storing Covered Data
  - Secure Covered Data
  - Monitor and Comply with Evolving Federal, State, and Local UAS Laws
  - Limit the Use and Sharing of Covered Data
- Guidelines for Neighborly Drone Use for hobbyists
Legal privacy locally in the USA

- National Conference on States Legislatures:

  26 states—Alaska, Arkansas, California, Florida, Idaho, Illinois, Indiana, Iowa, Kansas, Louisiana, Maine, Michigan, Mississippi, Montana, Nevada, New Jersey, North Carolina, North Dakota, Oregon, South Dakota, Tennessee, Texas, Utah, Vermont, Virginia and Wisconsin—have passed legislation that falls within the broad category of privacy.

Legal privacy **locally** in the USA

- **States Legislatures laws:**
  - Primarily provide bounds on flying over private land
- **Eg: Indiana SB 299 criminalises as class A misdemeanor**
  - Operation of a sUAS in a manner that interferes with a public safety official in the course of their duties.
  - “remote aerial voyeurism.”
    - Which becomes a level 6 felony if the images are then published or shared
Current Technological Evolutions (2019)

- No Peeking through My Windows: Conserving Privacy in Personal Drones
- Toward Drone Privacy via Regulating Altitude and Payload
- Data Security and Privacy Issues in Swarms of Drones
- SoK - Security and Privacy in the Age of Drones: Threats, Challenges, Solution Mechanisms, and Scientific Gaps
Challenge as related to academics

- Most resources currently do not reflect ‘scientific data’
- None of the resources consider the goals of F.A.I.R, or Open data
- This would serve citizen science drone users too
- There are unique additional considerations around agricultural and conservation activities
- There are most likely existing non-drone data codes of conduct we could build on

**Conclusion:** “We” could create a code of conduct that extends beyond national or institutional bounds related to data captured using our drones

**SubConclusion (from discussion):** But do we need this given so many of us just publish the data openly already?
More References

- https://www.auvsi.org/code-conduct
- https://blog.werobotics.org/2019/03/14/hhi-code-of-conduct/

Citizen Support for Domestic Drone Use and Regulation