

Ethical and Legal considerations operating drones in the USA

Introductory Webinar in the lead up to RDA 15th Plenary

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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/ubm6f5l> (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
 - 18-20 March 2020 Melbourne <https://www.rd-alliance.org/plenaries/rda-15th-plenary-meeting-australia>

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)

Approved Service Supplier	Part 107 Near-Real Time Authorization	Part 107 Further Coordination	Exception for Recreational Flying/Section 44809
Aeronyde ↗	✓	✓	
Airbus ↗			
AirMap ↗	✓	✓	✓
Airspacelink ↗			
AIRXOS ↗	✓	✓	
Altitude Angel ↗	✓	✓	✓
Avision ↗			
Botlink ↗			
Collins Aerospace ↗			
Converge ↗	✓	✓	
DJI ↗			
Drone Up ↗			
Harris Corporation ↗			
Kittyhawk ↗	✓	✓	✓
Project Wing ↗			
Simulzye ↗			
Skygrid ↗			
Skyward ↗	✓	✓	
Thales Group ↗	✓	✓	✓
UASidekick ↗	✓	✓	✓
Unify ↗			

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.**

<https://www.ncsl.org/research/transportation/2017-unmanned-aircraft-systems-uas-state-legislation-update.aspx>

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
 - <https://arxiv.org/pdf/1908.09935.pdf>
- Toward Drone Privacy via Regulating Altitude and Payload
 - <https://ieeexplore.ieee.org/abstract/document/8685611>
- Data Security and Privacy Issues in Swarms of Drones
 - <https://ieeexplore.ieee.org/abstract/document/8735133>
- SoK - Security and Privacy in the Age of Drones: Threats, Challenges, Solution Mechanisms, and Scientific Gaps
 - <https://arxiv.org/abs/1903.05155>

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.ncsl.org/research/transportation/current-unmanned-aircraft-state-law-landscape.aspx>
- <https://ipc.v51.com/wp-content/uploads/Resources/pbd-drones.pdf>
- <https://www.auvsi.org/code-conduct>
- <https://blog.werobotics.org/2019/03/14/hhi-code-of-conduct/>
- https://www.ntia.doc.gov/files/ntia/publications/uas_privacy_best_practices_6-21-16.pdf
- Citizen Support for Domestic Drone Use and Regulation
 - <https://journals.sagepub.com/doi/full/10.1177/1532673X18782208>