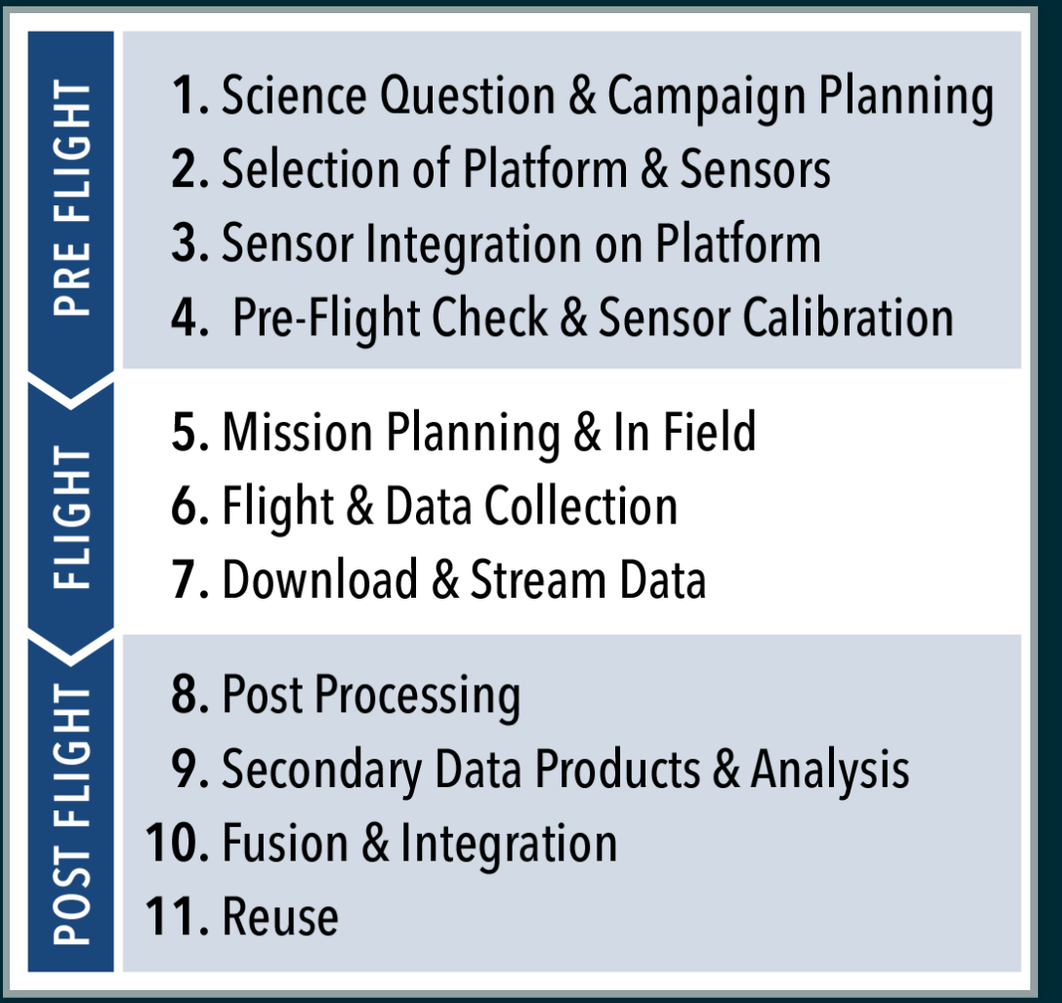
LANDRS

Linked-data **A**PI for **N**etworked **DR**one**S**

DESIGN HACK1

TOC

- [A] What/Why/How LANDRS
- [B] Todays intro
- [C] How to get involved



[A] LANDRS

WHAT: PROJECT GOALS

- *I]* Build everything in community, as open source resources, with the intention of supporting enabling FAIR drone data and avoid reinventing wheels.
  - *Data Semantics:* Ontologies & Models
  - *Data Storage:* Files & Schema
  - *Data Movement:* Transport & Provenance
- *II]* Develop APIs for building drone data manament/handling tools that are standards based and provide native support for using semantic technologies in a networked world.
- *III]* Develop best practices through a 18month Research Data Alliance Working Group engaging with the international drone community.

[A] LANDRS

WHY THESE GOALS?

Current challenges in drone data management[1]

1. Sensor use procedure
2. Operational practices
3. Analytics and Error correction procedures
4. *Data and metadata data formats*
5. *Data and metadata provenance practices*
6. *Data product levels*
7. *Data management and analytics tools*
8. Data management education

[A] LANDRS

WHY FAIR DRONE DATA?

1. Is making Data FAIR worth while?
- **Yes:** Says the academic community in general on regarding scientific data within sensible caveats [2–4]

[A] LANDRS

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1. Is making Data FAIR worth while?
- **Yes:** Says the academic community in general on regarding scientific data within sensible caveats [2–4]

2. Is making specifically **drone** Data FAIR worth while?
- **Yes**: sUAS data are:
  - Uniquely 4+ dimensional
  - Uniquely high spatiotemporal resolutions
  - Classically Big
  - Increasingly created by small science

[A] LANDRS

WHY *SEMANTICALLY* RICH *LINKED* DRONE DATA?

- Because it makes *FAIR* more easily realisable and we're moving towards a world that Linked Drone Data will serve
  - Enable discovery by search engine bots
  - Enable machine reasoning (“understanding”) of the data
  - Facilitate reuse by 3rd party researches (by conveying assumptions and meaning of terms through links to term definitions)
    - Use of ontologies makes data models modular and reusable/sharable
    - Enable publication/credit/citation of these data easier
- Because it will make these drone data use cases easier to realise: integration and co-operation between farmers & governments/citizen scientists and researchers/scientist to scientist/smart application to human/drone to drone/...

[A] LANDR

PROJECT TIMELINE

- *2019 Q2 - Q4: Design*
  - ESIP Summer meeting design workshop/hackathon1 16 July
  - RDA Helsinki P14 design workshop/hackathon2 21 October
  - Begin implementation
  - Student exchanges
- *2020 Q1-Q3: Development*
  - Development
  - Deployment hackathon1: Host domain and location TBD*
  - Student exchanges
- *2020 Q4 - 2021 Q1: Deployment*
  - Deployment hackathon2: Host domain and location TBD*
  - Transition to community ownership
  - RDA WG in parallel

[B] TODAYS INTRO

MORNING

10:15 - 11:45 (90min) Morning talks:

- Intro
- Current drone data tooling:
    - Joe Adams: USGS drone data technical stack
    - Sudhir Shrestha: Esri drone data technical stack
    - Chris Schnaufer: Cyverse and drone data
    - John Graybeal: Introduction to CEDAR
    - Unconference pitches

11:45 - 12:45 Lunch (60min)

[B] TODAYS INTRO

AFTERNOON

12:45 - 18:00 Unconfernce

Vote with your feet afternoon

- *Session1: 13:00 - 15:00* (120min) (ESIP coffee break 14:15)
- Report back at 15:00
- *Session2: 15:15 - 17:15* (120min) (ESIP coffee break 16:15)
- Report back at 17:15

17:15 - 18:00 Closing session

[C] HOW TO GET INVOLVED

- Github here https://github.com/opengeospatial/LANDRS
- Slack channel https://qrgo.page.link/TcV1W
- [ESIP Drone Cluster list:] (https://tinyurl.com/yy9bjzhe) https://tinyurl.com/yy9bjzhe
- [RDA sUAS data IG list:] (https://tinyurl.com/z5gf4zr) https://tinyurl.com/z5gf4zr

TODAY

REFERENCES

1. Wyngaard J, Barbieri L, Thomer A, Adams J, Sullivan D, Parr C, et al. Emergent challenges for science suas data management: Fairness through community engagement and best practices development. 2019;

2. Wilkinson MD, Dumontier M, Aalbersberg IJ, Appleton G, Axton M, Baak A, et al. The fair guiding principles for scientific data management and stewardship. Scientific data. 2016;3.

3. Stall S, Robinson E, Wyborn L, Yarmey L, Parsons M, Lehnert K, et al. Enabling fair data across the earth and space sciences. Eos. 2017;98.

4. Mons B, Neylon C, Velterop J, Dumontier M, Silva Santos LOB da, Wilkinson MD. Cloudy, increasingly fair; revisiting the fair data guiding principles for the european open science cloud. Information Services & Use. 2017;37: 49–56.