[A] Building for FAIR[2] Drone Data

Why

I. Drone data is being collected by research groups without dedicated data support

II. Drone data has significant potential reuse value

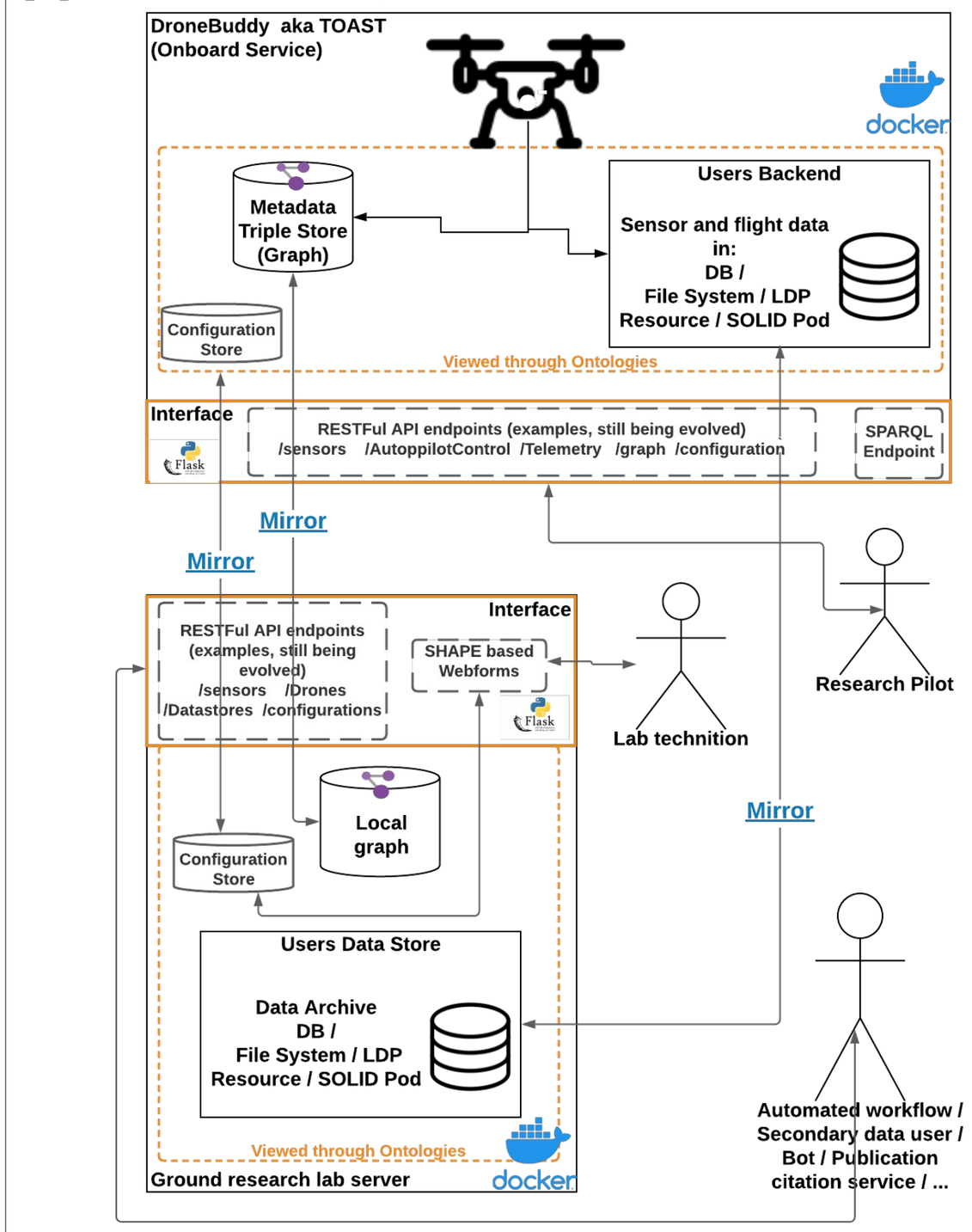
III. A Typical Drone Data Pipeline is very complex and therefore in need of automation to minimize sources of error and save time

IV. Funders are requiring data publication, and if these data can be published FAIR-ly [2] then the long term value of these data can be extracted

Figure 1. Illustration showing operational altitudes of remote sensing platforms.

USGS: https://fas.org/irp/program/collect/usgs-uas.pdf

[B] LANDRS technology stack



References

[1] Wilkinson et al; 2016; The FAIR Guiding Principles for scientific data management and stewardship

[2] http://docs.opengeospatial.org/per/20-020.pdf

[3] By SangyaPundir - Own work, CC BY-SA 4.0, https://commons.wikimedia.org/w/index.php?curid=53414062

Linked-data API for Networked DRoneS

www.landrs.org

Authors

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This work draws on extensive input over the past 6 years from the broader academic drone user, legislator, manufacturer, and non-drone data management communities

[C] Why linked drone data

Why linked drone data

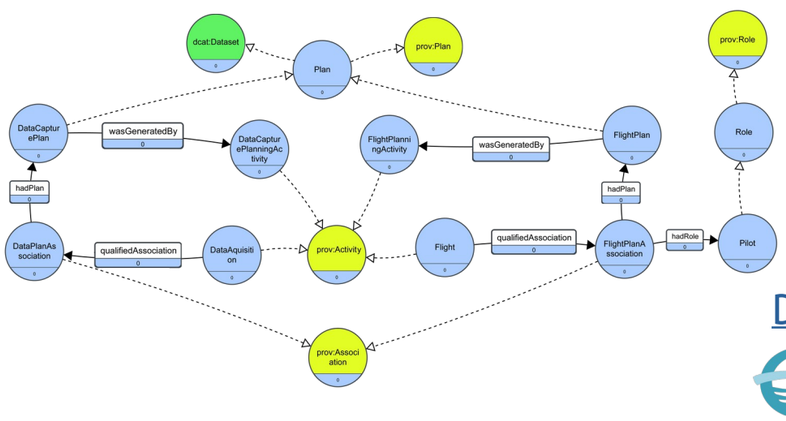
- Initially:
  - To enable discovery by search engines
  - To facilitate integration with the many building blocks emerging to enable FAIR data
  - Enable machine reasoning ("understanding") of the data
  - Facilitate reuse by 3rd party researches (by conveying assumptions and meaning of terms through links to term definitions)
  - Use of ontologies makes data models modular and reusable/sharable
- Increasingly now:
  - To set in place foundations that will allow these data to be fed into neural networks both for training and analysis

Web and Spatial Standards

W3C OGC Making location count.

Domain Ontology Development

Envo tern Ecosystem Research Infrastructure ESIP



Drone Data Communities

ESIP RDA RESEARCH DATA ALLIANCE OGC Making location count.

LANDRS Ontology: Aligns to OGC: PROV, OWL-Time, SOSA ; W3C: DCAT, PROV-O, FAA-OGC testbed Aviation Information Exchange [2]

[D] How to get involved

Github: https://github.com/landrs-toolkit

Slack channel: https://join.slack.com/t/landrsworkspace/shared_invite/zt-cgj1wt85-i~_Z0YbZxtQ~8iJEWgLzdQ

Communities:

ESIP Drone Cluster list: https://tinyurl.com/yy9bjzhe

RDA sUAS data IG list: https://tinyurl.com/z5gf4zr

Students: 2x Msc (electrical-computer engineering)

Ngoni Mombeshora: **5G data streaming integration with LANDRS toolkit**
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OPEN AIR INTERFACE

Mauro Borrageiro: **Open Professional Science Hexa&Quad-copter with flexi-scensor mount**
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