

# Drone data & the semantic web



<https://tinyurl.com/z5gf4zr>



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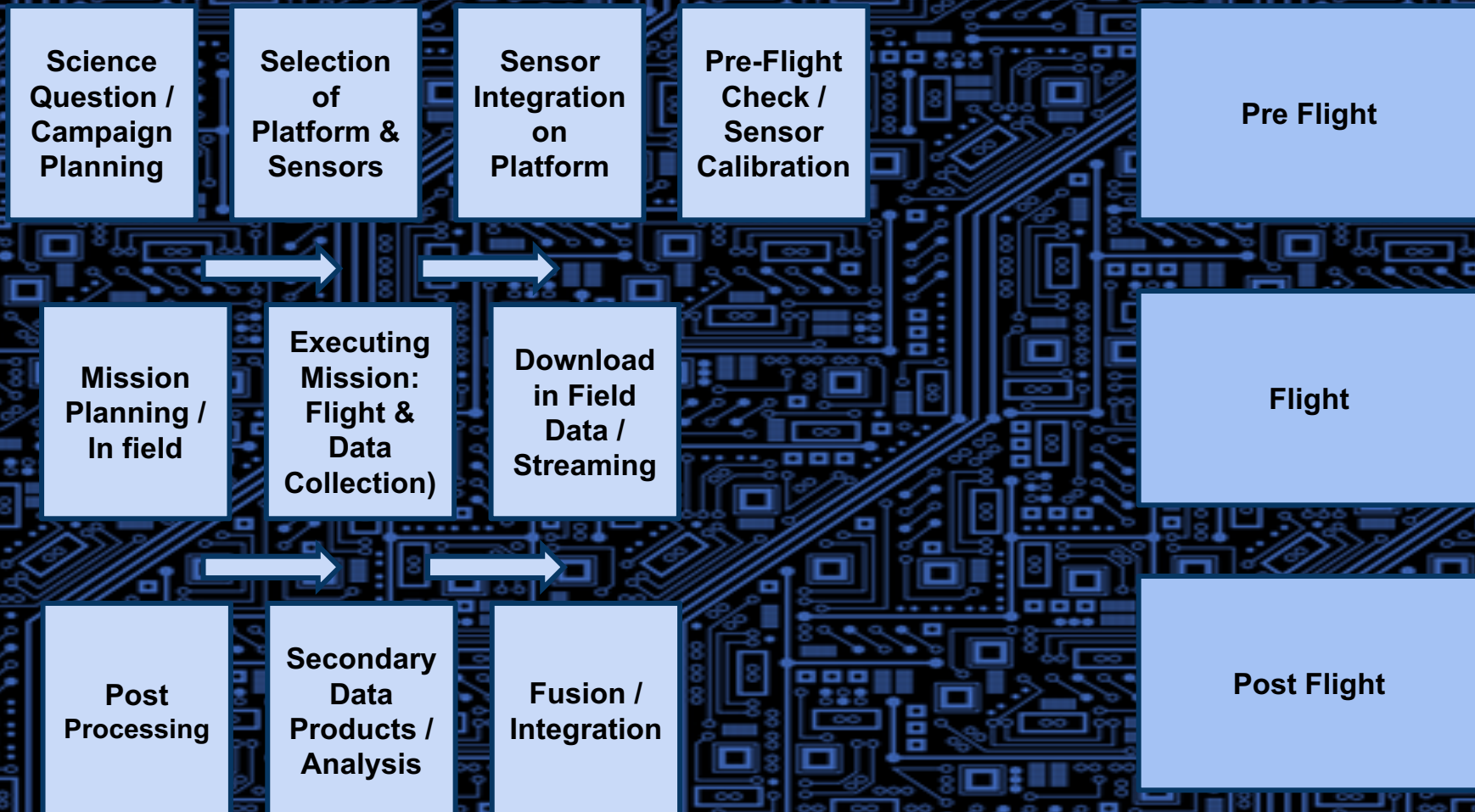
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# Outline

- Scientific sUAS data management open challenges
- Quick overview of ESIP Drone Cluster & RDA sUAS Data IG goals
- ESIP Laboratories project
- VOCamp outcomes
- ESIP Winter meeting working session invitation

# sUAS Data IG Questions

1. What **standard sensor calibration** and use procedures need to be defined and articulated?
1. What best practices regarding **data post processing and error analysis** methodology need to be outlined?
1. What is the **minimum metadata** that needs to be collected about a scientific sUAS data capture flight?
1. Which **formats** should be used to store (meta)data in?
1. Which **ontologies** should be applied -- or need to be developed -- for sUAS (meta)data? (what we began addressing at the VOCamp)



# Efforts underway

- ESIP Lab Incubator project
  - PIs: Thomer, Huffer, Barbieri, Wyngaard
  - VOCamp: <https://github.com/Vocamp/dronedata>
- P11 Berlin (21-23 March): Joint session with From Observational Data to Information IG and Research Data Collections WG

# ESIP Lab project

Using methods inspired by systems analysis to derive a high-level minimum information framework (MIF) for drone data

- Detailed documentation of 3 cases of drone-based earth science research

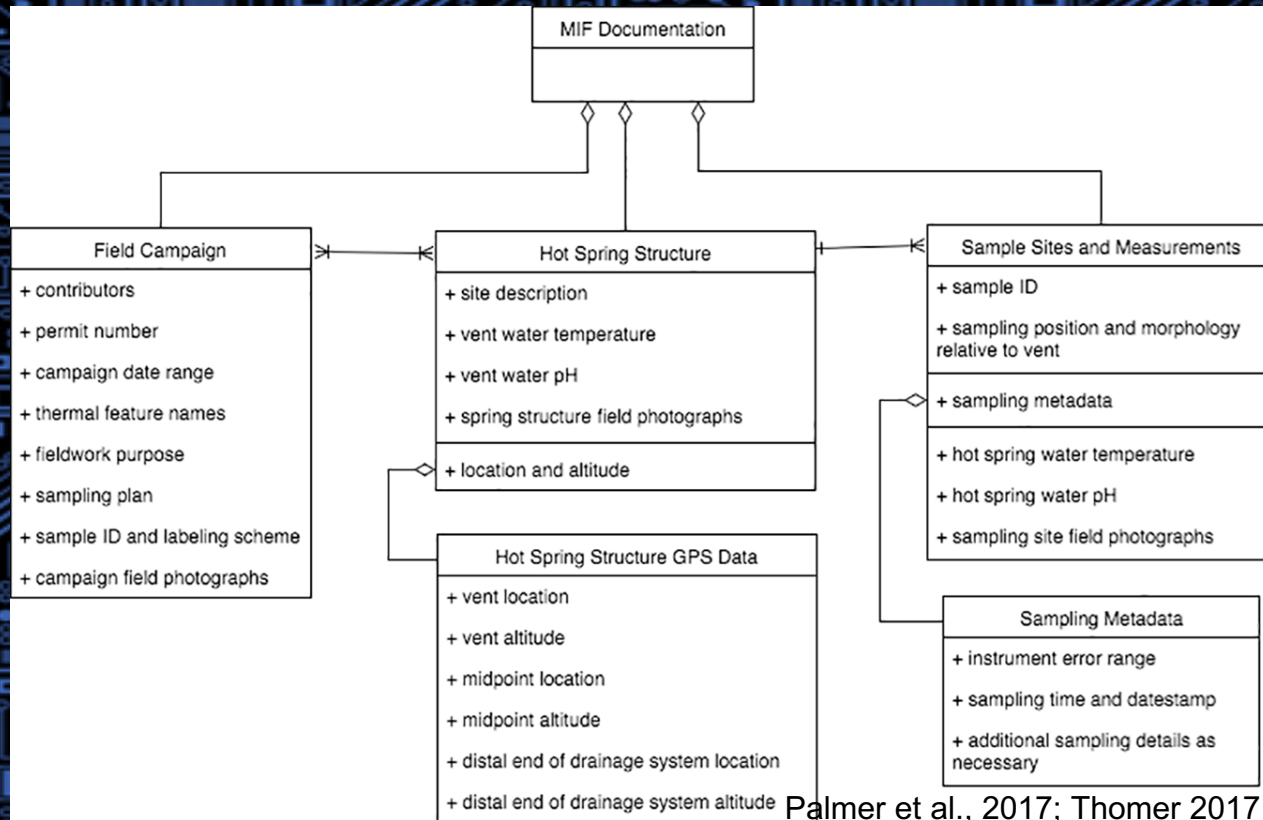
  - Use cases pulled from case studies

  - MIF as backbone/testbed for preliminary drone data ontology

Using YAMZ as a platform to vote for ontology terms (and definitions?)

**Deliverables: minimum information framework for drone-based earth science; proto drone data ontology; use cases.**

# Minimum information framework - from geobiology



# VOCamp inspiration: Geolink cruise & event patterns

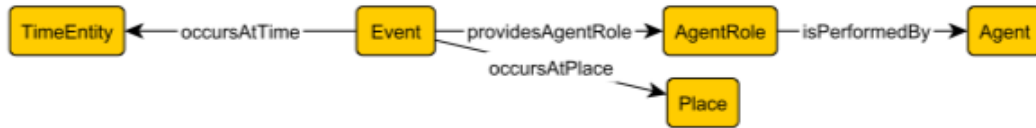


Fig. 2. Event pattern

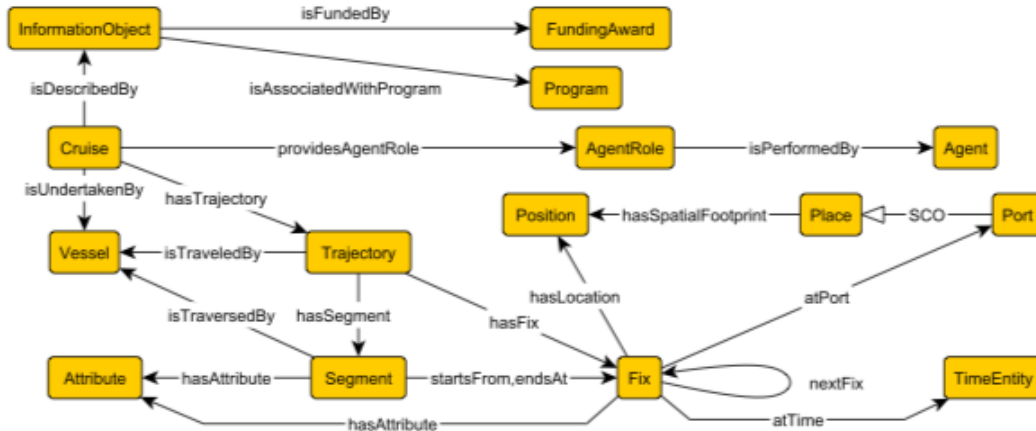
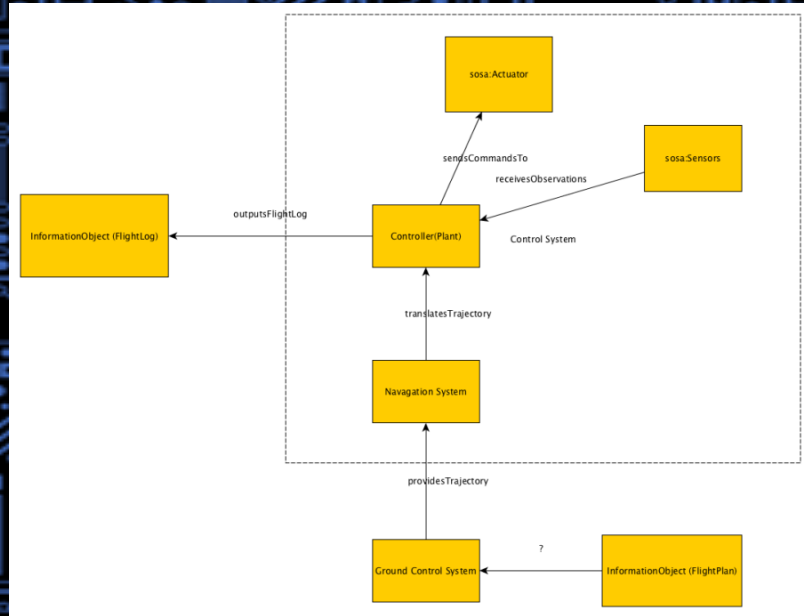
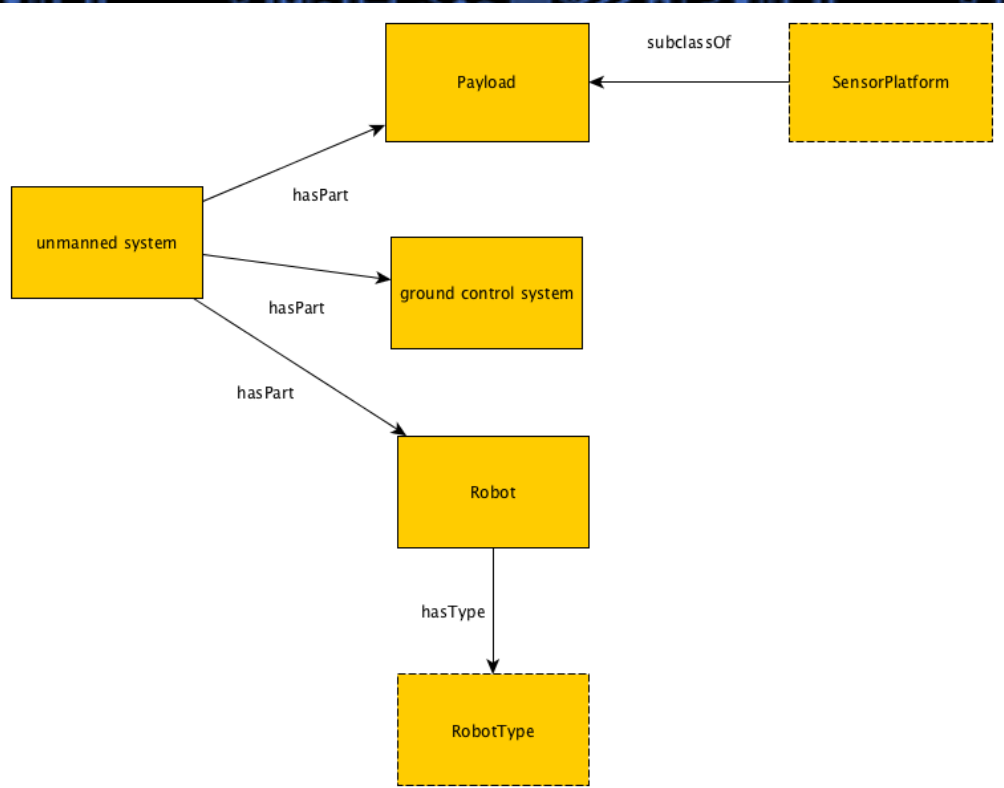


Fig. 3. Cruise with Trajectory and Agent Roles. SCO=subClassOf

<http://daselab.cs.wright.edu/pub/2015-geolink-ontology.pdf>

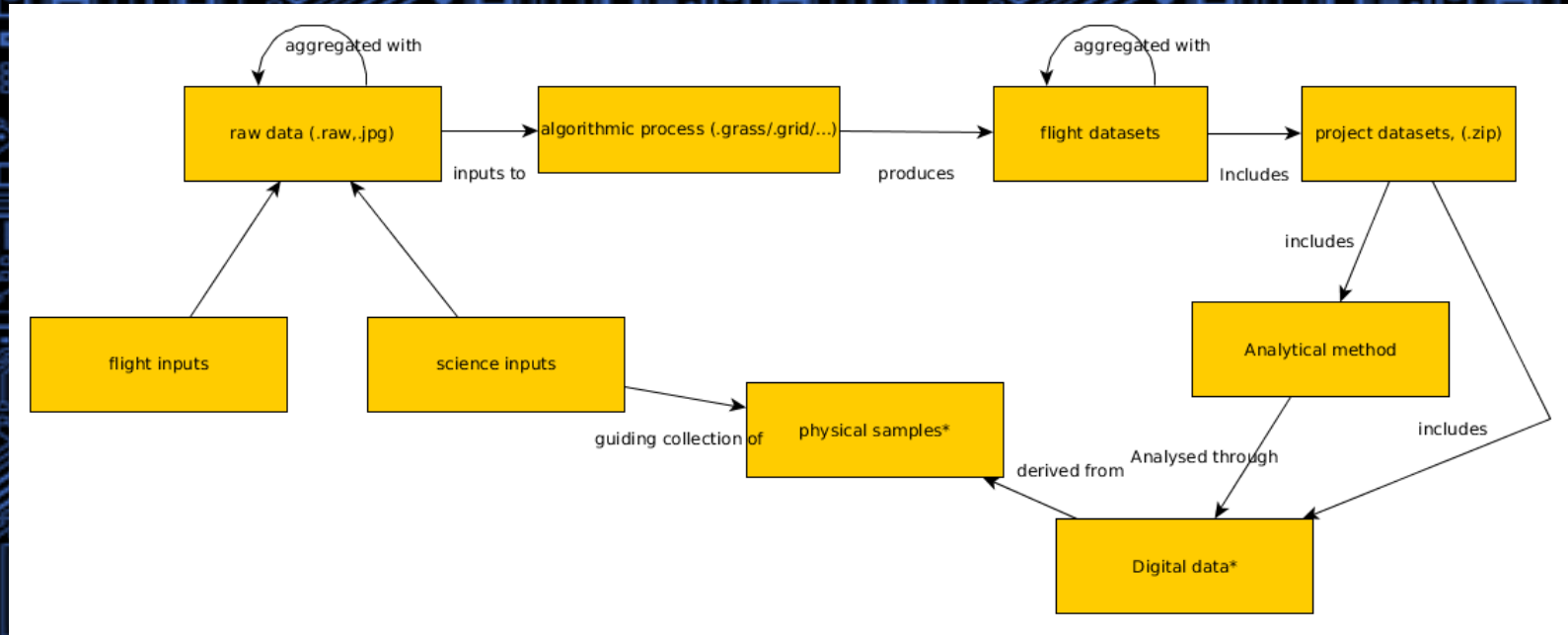


# VOCamp: Unmanned System





# VOCamp: Results data flow



# Aims for today?

Input wanted:

on the design patterns, and on our next steps toward a drone data ontology.

on planned work with YAMZ as part of the ESIP Lab project

On potential opportunities for pilot projects/testbeds with drone data

# ESIP Winter meeting working session invitation

**Joint session between the Semantic Web cluster and Drone Cluster:  
Applying semantic tech to sUAS data**

**Wednesday, 2:30pm**