



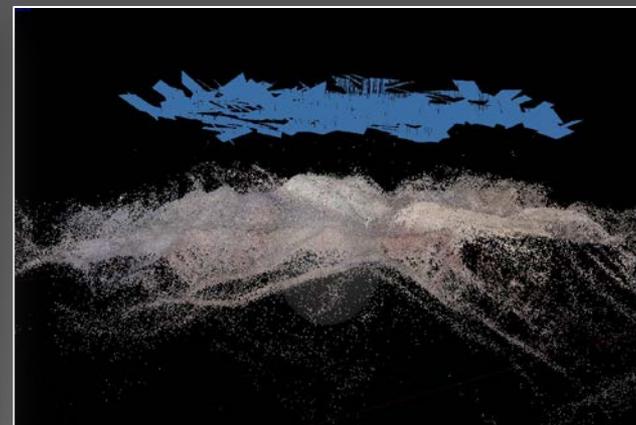
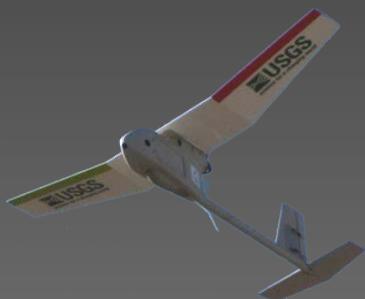
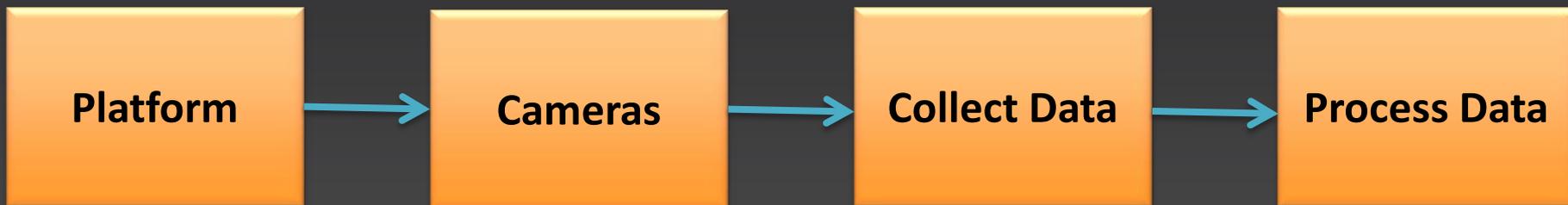
# USGS - Unmanned Aircraft Systems National Project Office

[uas.usgs.gov](http://uas.usgs.gov)

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# UAS Production Process



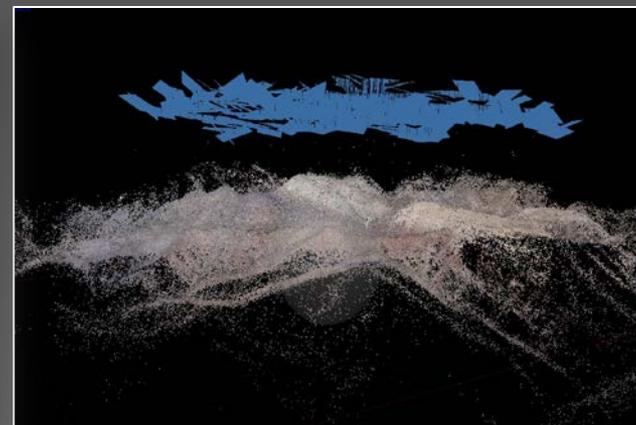
# UAS Production Process

Platform

Cameras

Collect Data

Process Data



# Policies: Who Can Operate a UAS in the United States - National Airspace System?

- Can a civilian company operate an UAS as part of a business?

Currently, civilian companies may not operate a UAS as part of a business without obtaining a Special Airworthiness Certificate - Experimental Category (SAC-EC). However, this SAC-EC is very limited in scope of operational use.  
FAA Order 8130.34

- Who can receive a Certificate of Authorization (COA) to fly a UAS in the NAS?

Only public agencies operating an unmanned aircraft.

- What is a “Public Agency”?

Any agency that operates a public aircraft (14 CFR Part 1.1)

If you receive funding from the federal government at some level, you are probably a “Public Agency.” A public agency cannot operate under the guidelines of Advisory Circular 91-57 (Model Aircraft)

# Policies: How to Operate in the United States National Airspace

- **Certificate of Authorization (COA):**
  - Authorization issues by the Air Traffic organization to a public operator for a specific UAS activity on a case-by-case basis.
- **Memorandum of Agreement (MOA):**
  - Signed Dec. 24, 2013 between the FAA and DOI-OAS
  - Information Bulletin No. 14-04
    - under 400'
    - line of sight
    - 5 miles from an airport
- **Dept. of the Interior - UAS Operational Procedures (OPM) No. 13-11:**
  - DOI-OAS outline procedures of how to operate UAS in the NAS

# Policies: How to Operate in the United States National Airspace

- **Spectrum:**
  - Currently on military frequencies
  - Future: On a civilian government frequencies or encrypted public freq.
- **Range or private owner approvals:**
  - Dept. of the Interior guidelines ask that we get the range (refuge, park management agency) and/or private land owner approvals
- **Airworthiness:**
  - Annual check of the systems by DOI-OAS for individual aircraft airworthiness
  - American Society for Testing & Materials (ASTM) International (Committee F38) [www.astm.org](http://www.astm.org)
  - NASA testing

# Policies: How to Operate in the United States National Airspace

- NOTAMs & Notices:

- Must issue a Notice to Airmen at least 48 hrs. in advance (COA or MOA)
- Contact the nearest Air Traffic Control Tower and Military Base if necessary

- UAS Operators

- Currency – have flown or been on a simulator in the past 90 days
- Proficiency – must be checked by an OAS instructor once a year
- Class 2 Medical – good for one year as issued by FAA approved physician

# Current U.S. Dept. of the Interior UAS Platforms

## AeroVironment – Raven RQ-11 A



|                    |                               |
|--------------------|-------------------------------|
| Wing Span          | 55 inches                     |
| Air Vehicle Weight | 4.2 lbs                       |
| Range              | 10+ km (LOS)                  |
| Airspeed           | 27-60 mph                     |
| Altitude           | >400 AGL                      |
| Endurance          | 90 min Lithium Battery        |
| Payload            | EO/IR Full Motion Video       |
|                    | GPS- Radio uplink & down link |
| GCS/RVT            | - Combined Weight – 14 lbs    |

## Honeywell – T-Hawk RQ-16



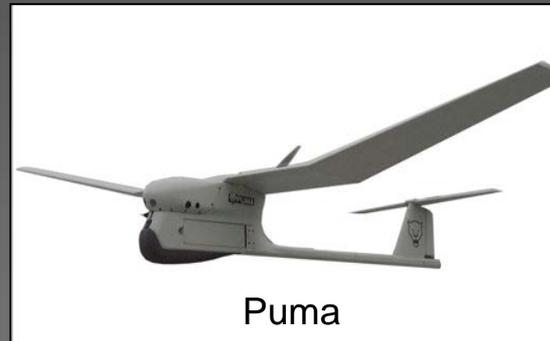
|                        |                          |
|------------------------|--------------------------|
| AV Weight              | 18 lbs                   |
| UAS System Weight      | 51 lbs                   |
| Range                  | 10 km                    |
| Endurance              | 47 minutes - Gas Powered |
| Payload                | EO/IR Sensor             |
| Max Speed              | 45 mph                   |
| Flight Characteristics | Hover and Stare Capable  |

# Possible New Platforms

## VTOL



## Fixed Wing



## Micro

