

State of the Drone



2016

What are the requirements to operate a sUAS in the NAS?

- Public institutions must obtain a COA
- Pilot license not required - Pilot/Operators are certified by the agency
- Pilot/Operator medical not required
- Public agencies must have a training program
- Public agencies certify their aircraft
- Medical certificate not required
- sUAS must weigh less than 55 lbs
- Visual line-of-sight (VLOS) only
- Daylight operations only
- Maximum altitude of 500 feet, currently 400 feet
- Special waivers must be obtained from FAA to operate outside these parameters



UAS

The new commercial class of UAS is designated sUAS (small unmanned aircraft systems). This category includes all unmanned aircraft over half pound up to 55 pounds. Aircraft in this category will be regulated under the proposed FAA Part 107 when it becomes final.





Fixed Wing Advantage

Long endurance - typically 1-2 hours or more

Disadvantage

Need large space for takeoff and landing

- Mapping - environmental monitoring
- Search and rescue
- Post disaster damage assessment
- Faster and longer range than multirotor, cover greater area per flight
- Pinpoint trouble spots for followup and closer inspection with rotary aircraft



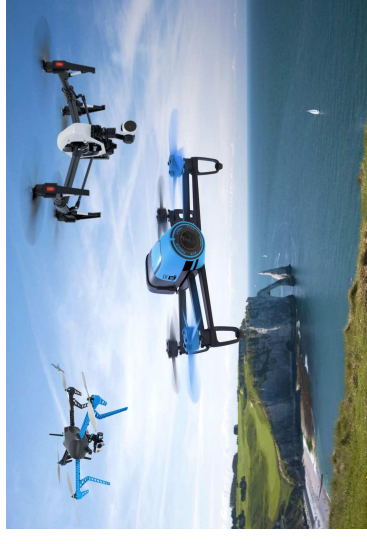
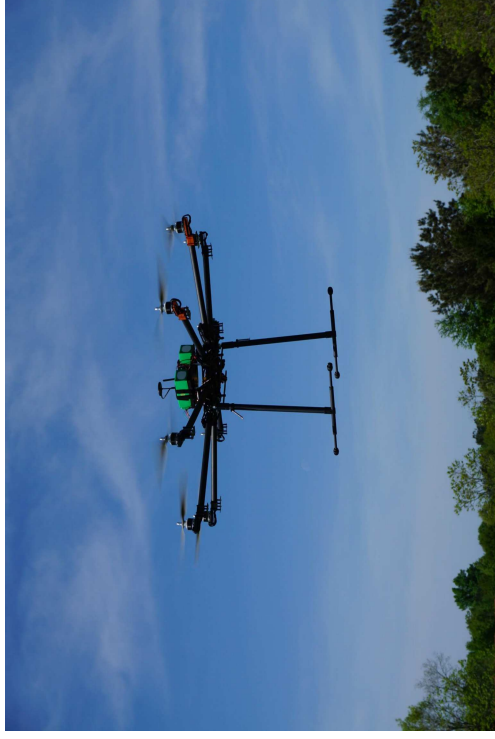
Multirotor

Advantages

- Hover and loiter capability
- Persistent surveillance
- No runway needed

Disadvantages

- Shorter flight duration
- Slower - less range than fixed wing aircraft



Miniaturization of sensors extends capability of sUAS

Fire fighter safety - see hotspots on roofs, see through smoke

Environmental monitoring

Accident documentation

Far less expensive than manned aircraft - less funding required to deploy a fleet of vehicles

Persistent hover and stare capability for hostage situation - law enforcement personnel stand off at a safe range

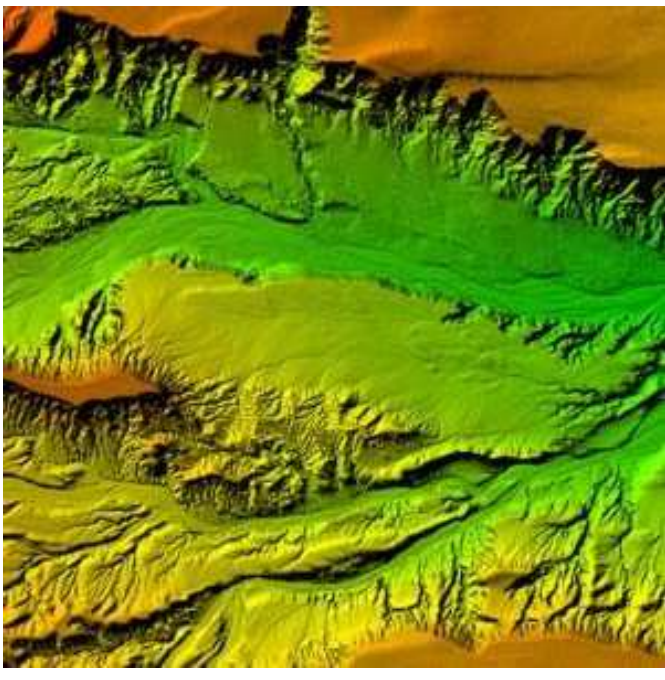




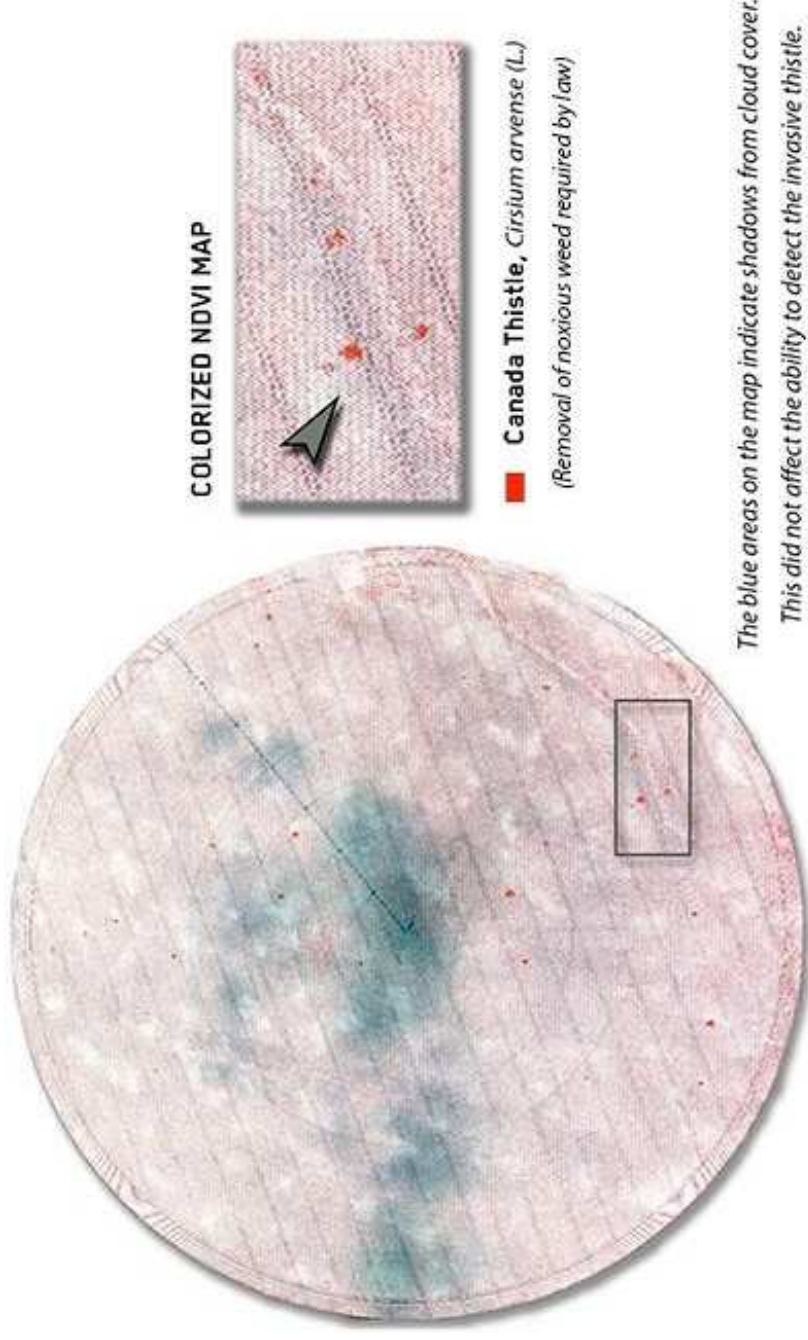
RGB - normal color vision



LIDAR - precision measurement - \$\$\$



Multispectral - marijuana interdiction





UAS

Hyperspectral = Predator Vision

See through solid objects - \$\$\$





Search and Rescue



Gulfport after Katrina



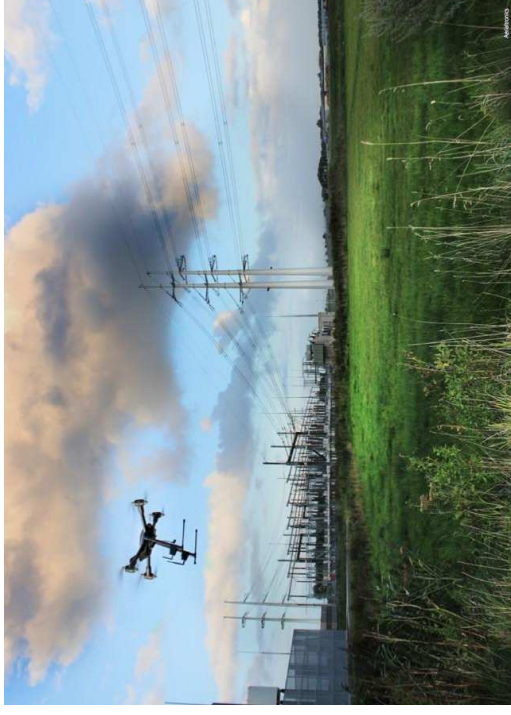
Delivery of food, water, medical supplies to inaccessible post disaster areas



Tower Inspection



Power Line Inspection



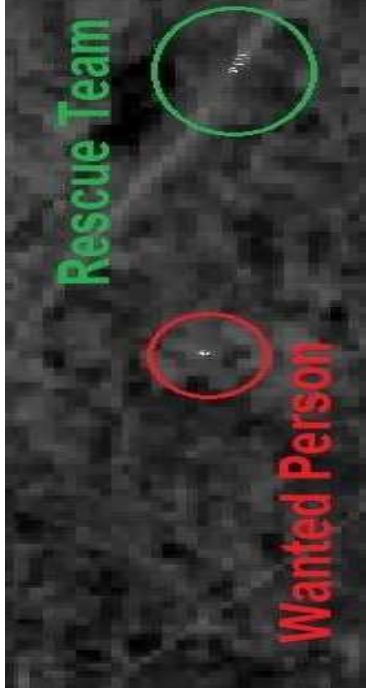
Bridge Inspection





First recorded Drone rescue

IR/Thermal





- Now is the time to put systems in place.
- Secure operating permissions with the FAA as a Public agency.
- Be prepared
- It takes time to put training and systems in place.
- sUAS is the next golden era of aviation. Be a participant.
- Lead the revolution.