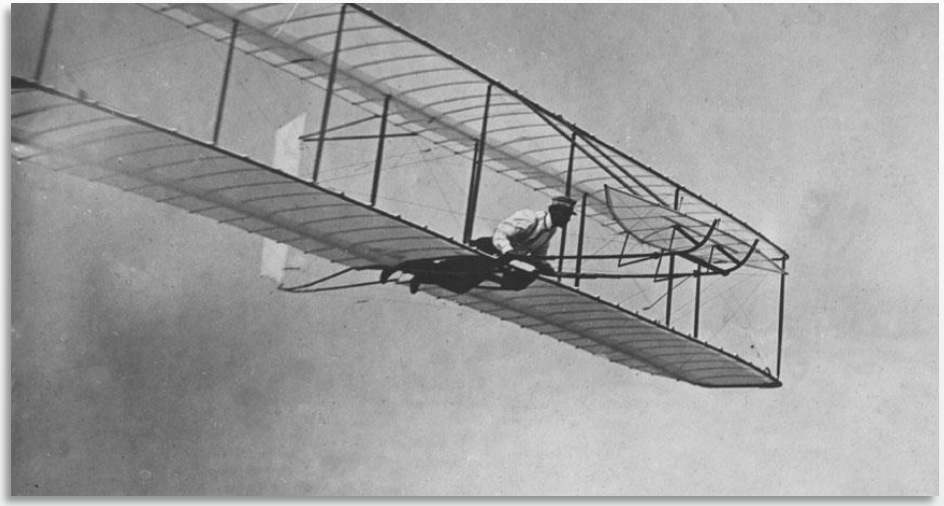
Unmanned Aircraft Systems (UAS)

Joint Legislative Oversight Committee on Information Technology
Chris Estes, State CIO | March 6, 2014

Agenda

- Background
- Highlights of UAS Report
  - Safety, Data, and Privacy
  - Uses and Benefits
  - Governance and Operations
  - Outreach and Communications
  - Cost and Funding
  - Legislative Considerations



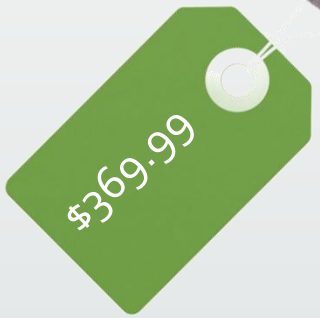
Background

What are UAS?

- **UAV** = Unmanned Aerial Vehicle (the aircraft itself)
- **UAS** = Unmanned Aircraft System (aircraft, controller, data collector, pilot, computers, storage, etc.)
- **Drone** = a misnomer for UAS/UAV that is commonly associated with the military

Many types of UAVs are now available to the public

Parrot AR Drone



DJI Phantom Quadcopter

Who governs UAS flights?

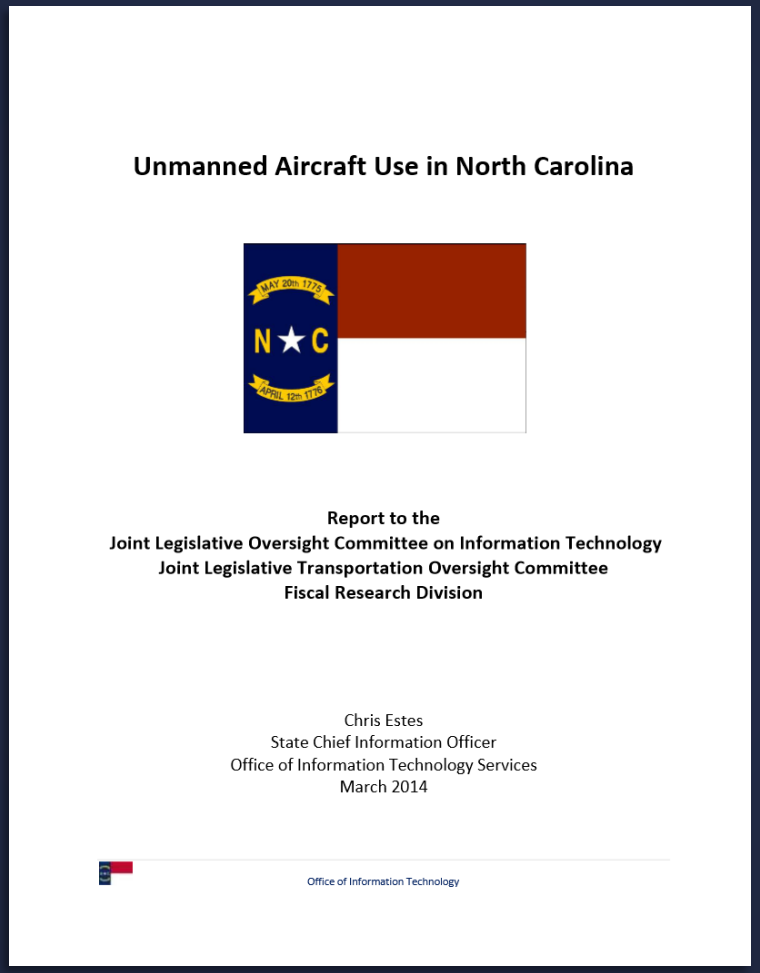

Amazon delivery concept: currently not allowed

- The FAA is strictly regulating UAS while studying safe integration into the airspace
- Operations currently limited to hobbyists and government use
- No commercial use until at least mid-2015
- Must have Certificate of Authorization[1]
- NC requires State CIO approval for government procurement or operation before July 1, 2015

[1] Exception is hobbyist flying

Approved flights in North Carolina

- NCSU's Next Generation Air Transportation (NGAT) is the only government entity approved to date
- NGAT received a Certificate of Authorization from the FAA and State CIO approval for research at 3 sites:
  - Hyde County (Gull Rock Test Site)
  - NCSU Butner Beef Cattle Farm
  - Private airfield in Moyock (Caratoke Site)
- Focus on:
  - Education and Research
  - Government Use Cases
  - Economic Development



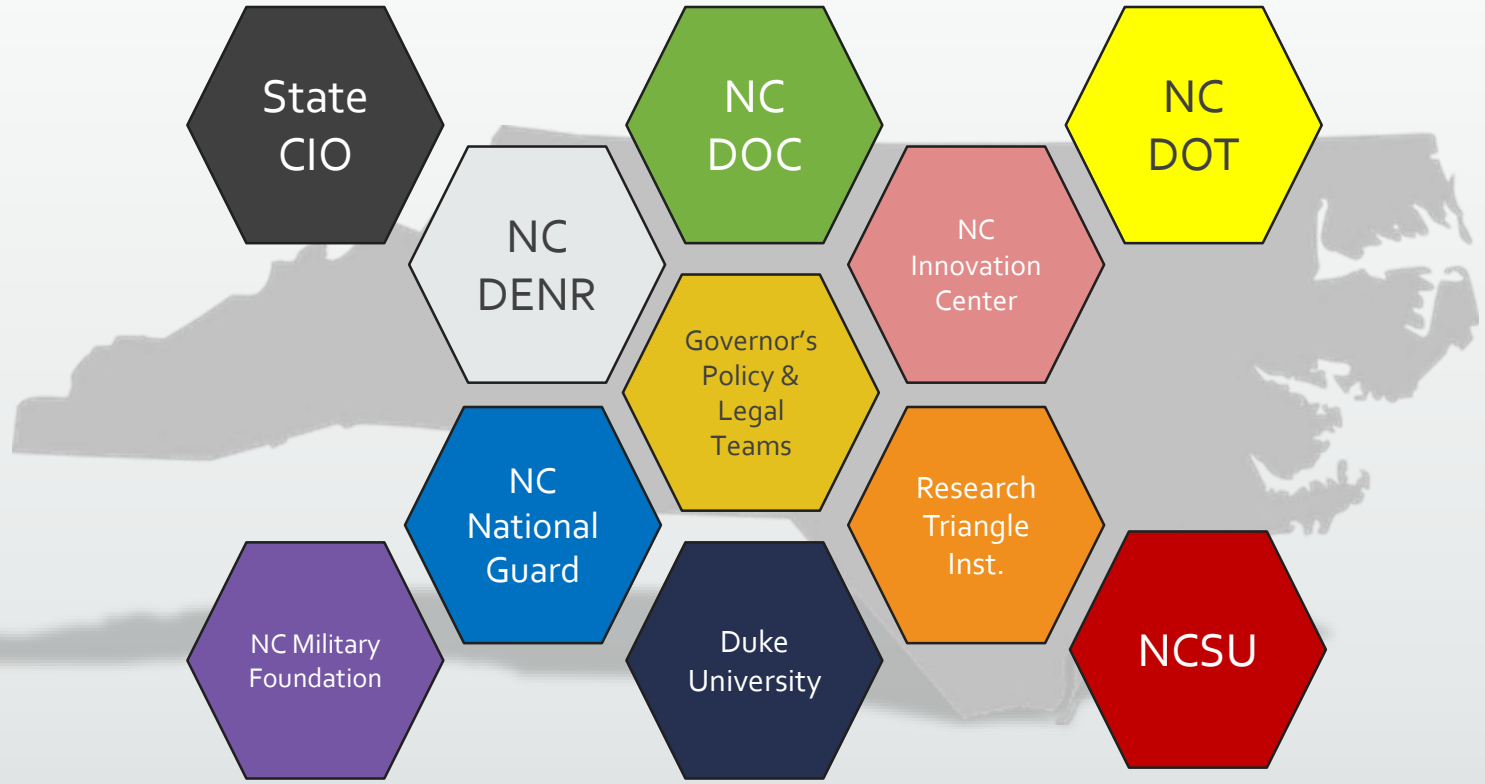
The 2013/14 budget bill directs the State CIO to study the potential need for UAS by government agencies and issue a report in March of 2014

The report covers:

- Safety, Data, and Privacy
- Uses and Benefits
- Governance and Operations
- Outreach and Communications
- Cost and Funding
- Legislative Considerations

Who was involved in this report?

The State CIO and DOT established a cross-functional UAS Working Group to assess UAS-related issues for this report



Safety in the Air and on the Ground

- Safety and protection of people and property, both on the ground and in the air, should be a priority
- FAA and NC governing bodies will make decisions based on safety first
- Safety Considerations:
  - Risk to manned aircraft: pilot, crew, and passengers
  - Potential to injure people or damage property on the ground
- Manned flights conducted by government entities should be given priority and airspace to prevent interference

> *"UAS must be integrated into the [National Airspace] without reducing existing capacity, decreasing safety, negatively impacting current operators, or increasing the risk to airspace users or person and property on the ground any more than the integration of comparable new and novel technologies." – Federal Aviation Administration*

Data Management

Standards and policies for the management of data collected by UAS:

- Should align with existing policies for manned flights or other data collection techniques
- Responsibility for data management should remain with the agency conducting the flight unless certain data can be centralized, catalogued, and reused
- Agencies and SCIO should work with DCR on retention, preservation, and disposal
- UAS data should be controlled by NC public records laws

Source: Monmouth University Poll – August 2013

Citizen Privacy and Protection

Public opinion varies about UAS privacy concerns:

83% support search-and-rescue use

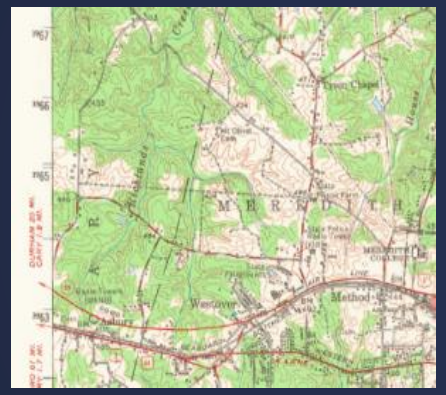
76% believe laws should govern law enforcement use

Existing laws may apply to UAS operations:

- Lawfulness of flight – where flights and landings can occur
- Dangerous flying – protects against unnecessary endangerment
- Protection against unlawful peeping and electronic surveillance
- Current manned aerial surveillance laws could be paralleled
- Law enforcement training and standards should be created

Source: Monmouth University Poll – August 2013






Potential Uses for Government

- Agriculture
- Precision Surveying and Mapping
- Wildlife Monitoring
- Vital Infrastructure Monitoring
- Public Affairs
- Cultural Resources
- Traffic Monitoring and Control
- Migration Monitoring
- Search and Rescue
- Disaster Analysis
- Anti-terrorism
- Firefighting Support
- Public Safety
- 911 Response
- Potential For Many Others

Potential Economic Benefits

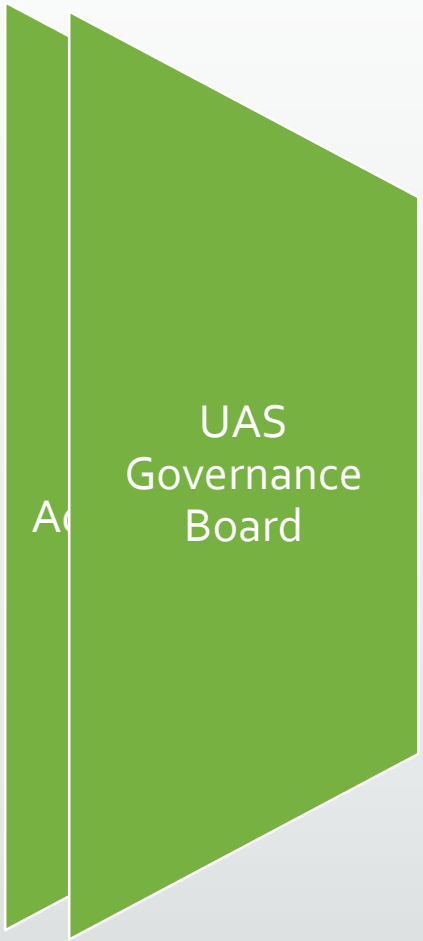
- The FAA estimates that 7,500 commercial UAS will be viable within 5 years and as many as 30,000 by 2020
- The state is poised to support an emerging private industry that would bring a predicted 1200 jobs and related economic development to NC

Governance and Operations

Governance – Roles

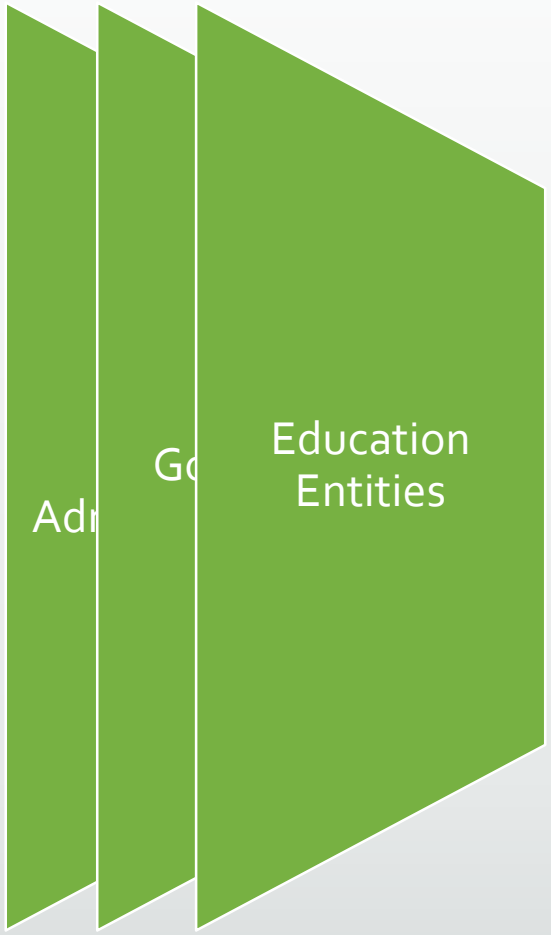
Governs all states' UAS operations

Governance – Roles



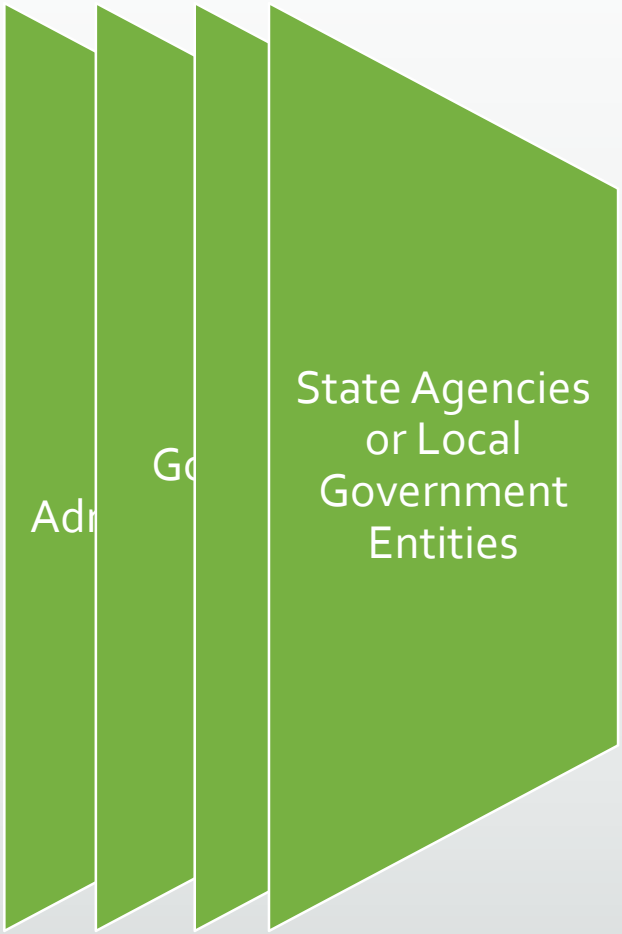
Provide approvals, oversight, and legal/policy recommendations

Governance – Roles



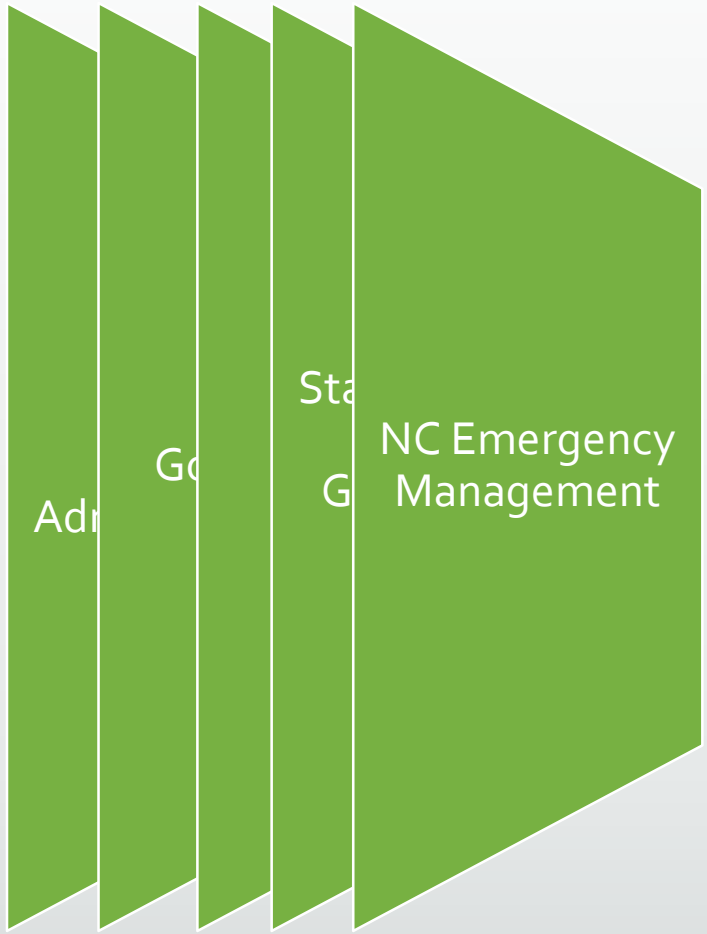
Provide assistance with UAS processes, contracts, research, and aircraft

Governance – Roles



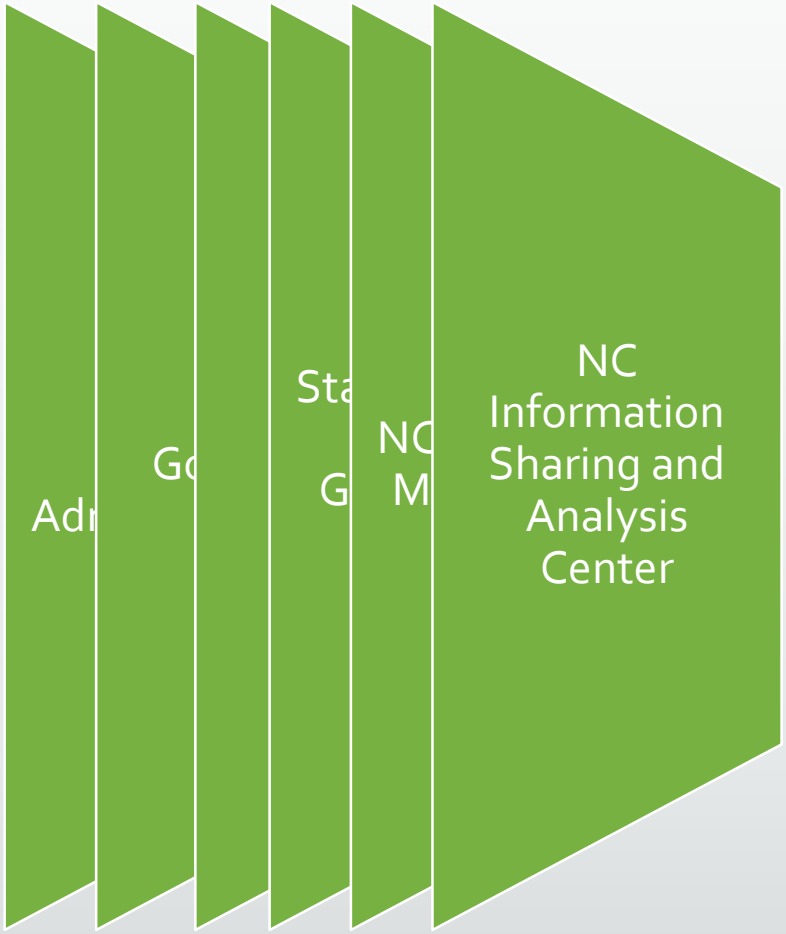
Pursue UAS operations when cost/benefit considerations are satisfied

Governance – Roles



Leverage state UAS assets in the event of a declared state emergency

Governance – Roles



Assist the UAS Governance Board in addressing law-enforcement related issues

UAS Governance Board

Duties could include:

- Developing statewide policies for UAS operations
- Researching laws and studying law enforcement implications
- Determining a list of pre-approved local and state uses
- Creating standards for UAS use and operations
- Approving or disapproving UAS operations requests
- Establishing an expedited process for reviewing time-critical requests
- Developing law enforcement UAS training and standards

Outreach and Communications

- UAS can be valuable to the state
  - Public outreach, education, and an open exchange of information are needed
- NC's program is being developed with transparency
- NGAT shares all flight information and is evaluating options for public demonstrations
- NGAT, NCSU, DOT and the State CIO's Office will support public communications





Costs and Funding

Requirement	Funding Estimate
Governance Board Support	$215K Recurring
Centralized Data Storage and Maintenance (when appropriate)	$130K Recurring
Full UAS start-up suite (UAVs, payloads, command vehicles, hardware, pilot, etc.)[2]	$850K Non-Recurring / $435K Recurring
Lease costs for UAS package (on a per-hour/per-day type basis)	Unknown

- Appropriated or receipt-based model *(Governance Costs)*
- NGAT Industry Membership Program
- Manned flight funds transferred to unmanned operations
- FY13-14 non-recurring UAS funding for DOT
- Grants, federal funding, expansion requests

Notes: [1]All costs are estimates
[2]Full suite will not always be required

Legislative Considerations

- Establish a UAS Governance Board to carry out the duties described in the report
- Study existing manned flight laws regarding data, privacy and safety that could be applied to UAS operations
- Establish standards for data collection, management and retention
- Address time and technology associated with public records requests
- Require notification to military installations of UAS flights in their area
- Further study could be required if the FAA allows commercial use of UAS or expanded operations

Questions?