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Unmanned Aircraft Systems(UAS) Program

Scott McDonnell, Aviation Coordinator

Topics to Cover

- Overview of UAS Program and Industry
- FAA Regulations
- Element of Success
- DEC Standard Operation Manual Overview
- Lessons Learned

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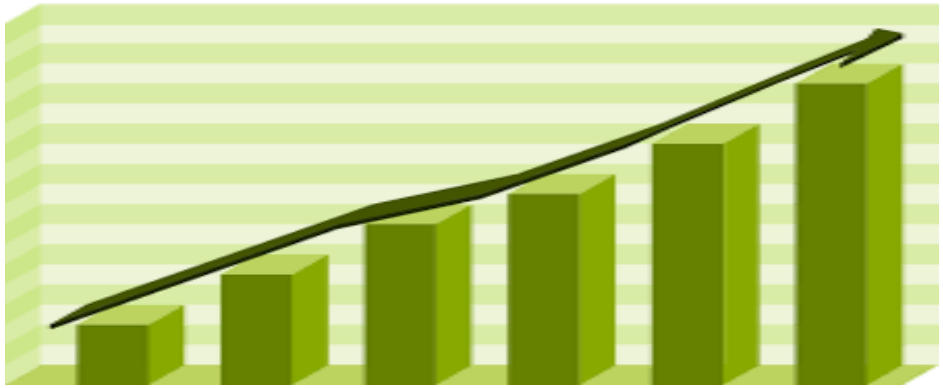
DEC UAS Program Overview

- 18 Part 107 Pilots Across NYS
- Over 25 Drones in DEC Fleet
- Over 75 Missions Completed
- $300K Investment Over Two Years
- $250K Savings in 9 Months



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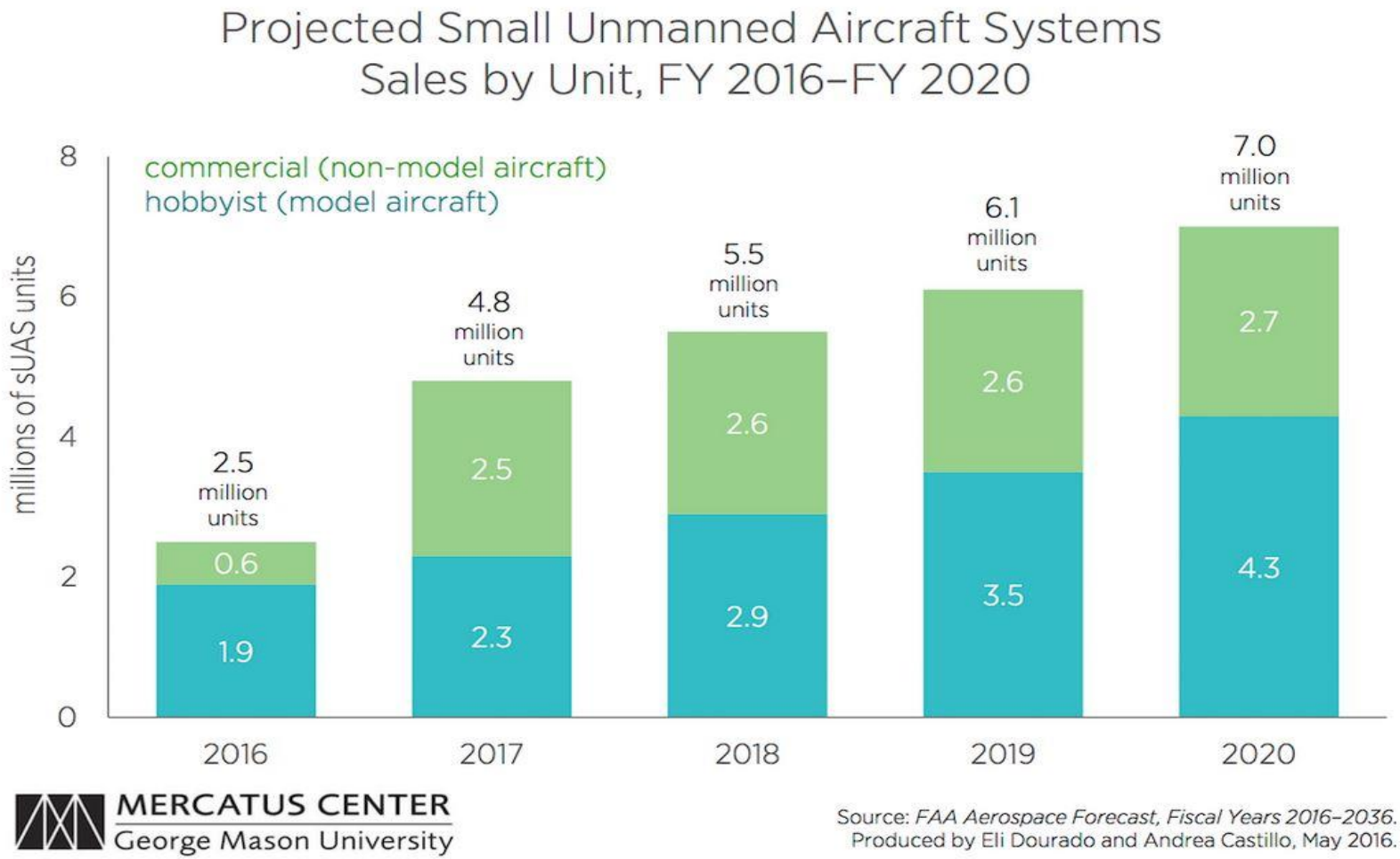
Growth of UAS Industry



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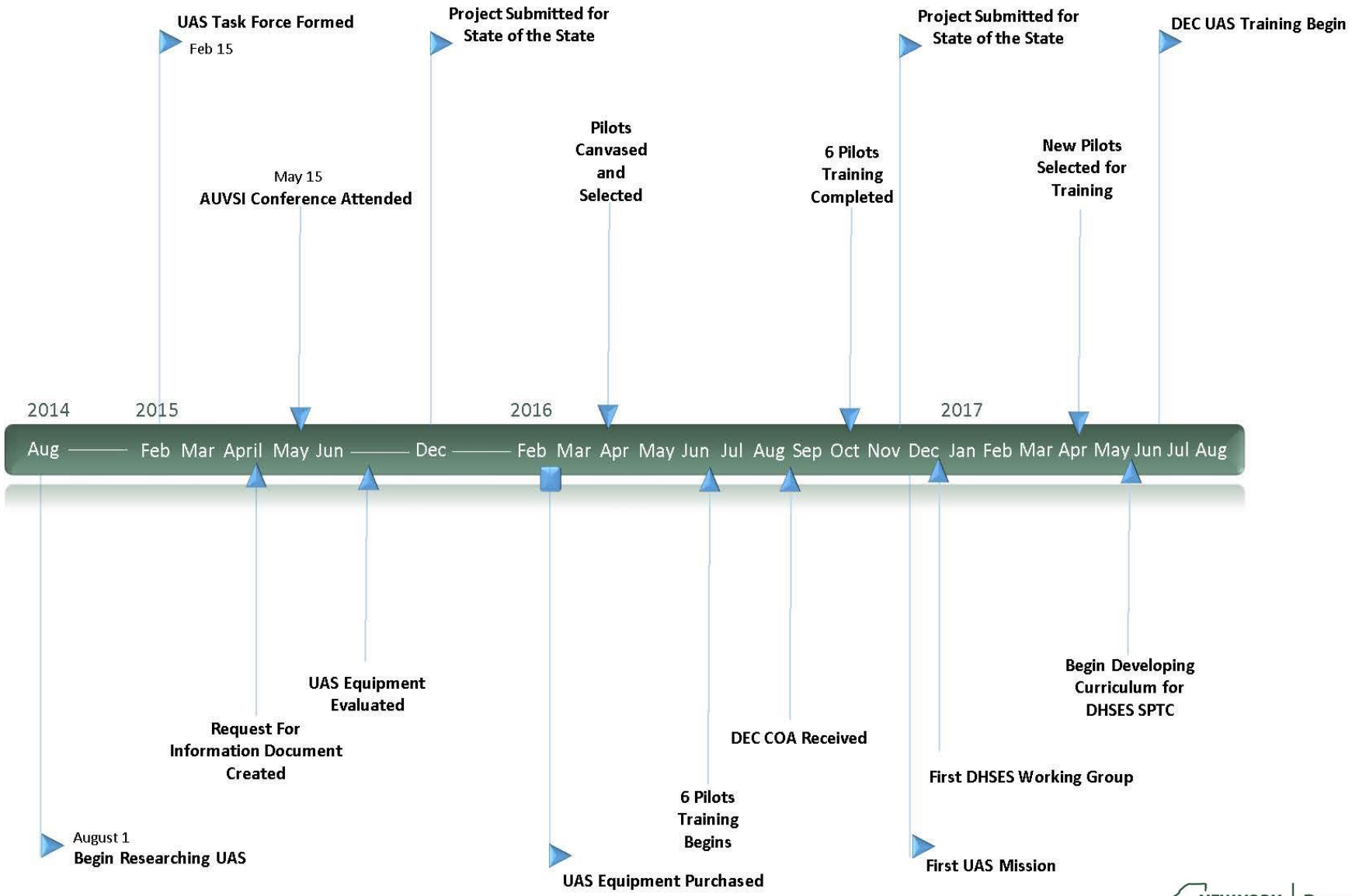
DEC UAS Program Timeline



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Types of UAS

Mavic $1K

Aeryon $110K

Matrice
$40K

Inspire $2K +payload

Customizable
FLIR (Thermal imaging /night vision/infer red)

Delair-Tech
$150K

Syma X5C
$30

Sensei $300

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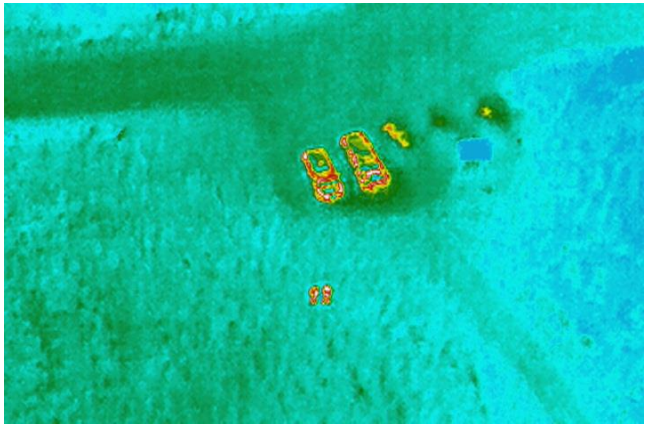
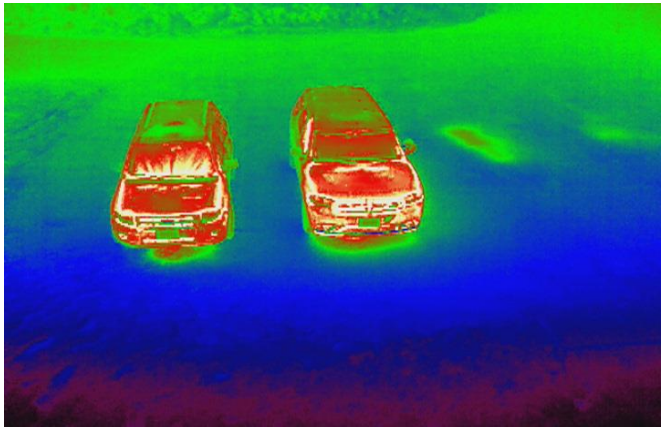
FLIR Camera Images





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Land mapping/Data Processing

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Land mapping Sample Image

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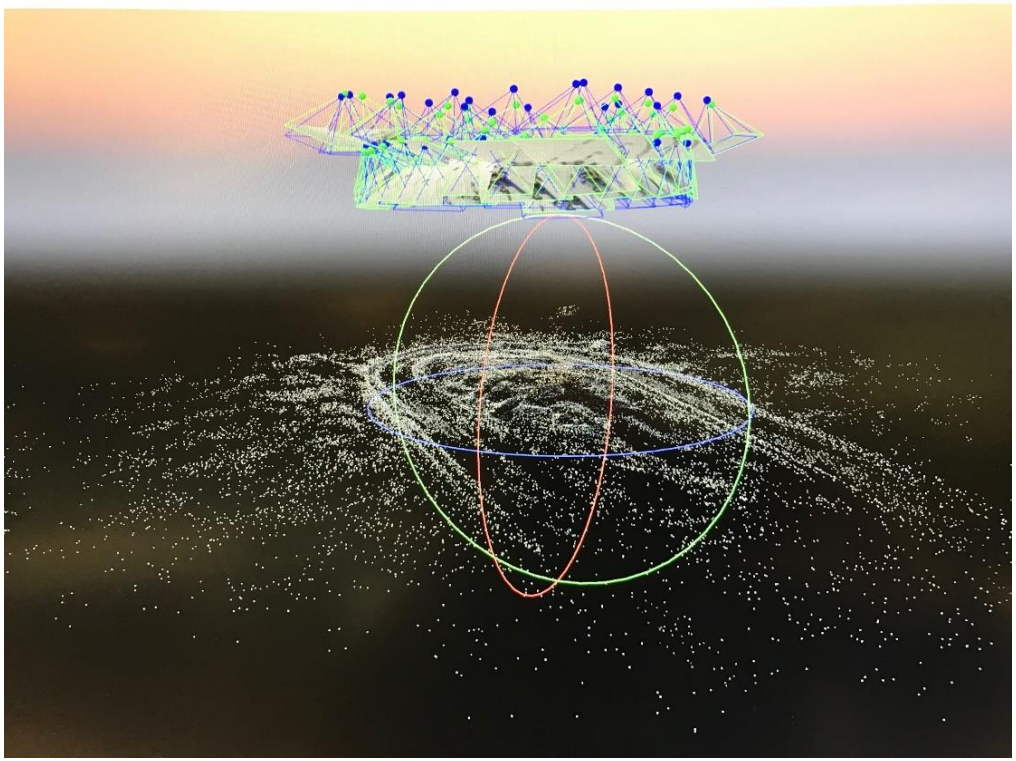
Oriskany / DHSES Aerial Mapping



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Oriskany / DHSES Aerial Mapping

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Potential Uses

- Search and Rescue
- Law Enforcement
  - Search Warrants
  - HRSI (Hunter Related Shooting Incidents)
  - Patrol
- Spills
- Remediation studies
- Forest Health
- Survey and Mapping
- Drainage and Erosion
- Wetland
- Wildlife studies
- Compliance inspections

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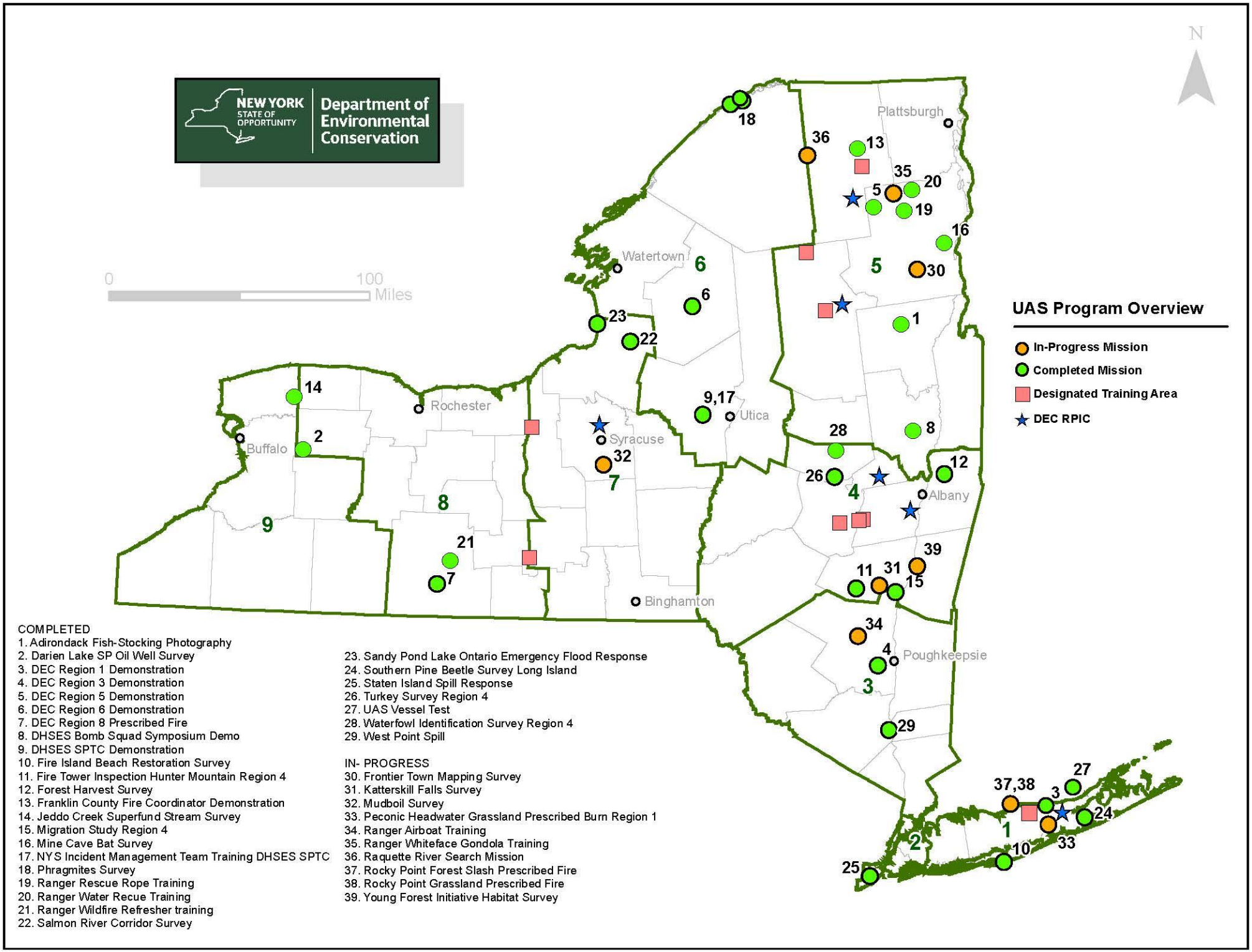

COMPLETED

1. Adirondack Fish-Stocking Photography
2. Darien Lake SP Oil Well Survey
3. DEC Region 1 Demonstration
4. DEC Region 3 Demonstration
5. DEC Region 5 Demonstration
6. DEC Region 6 Demonstration
7. DEC Region 8 Prescribed Fire
8. DHSES Bomb Squad Symposium Demo
9. DHSES SPTC Demonstration
10. Fire Island Beach Restoration Survey
11. Fire Tower Inspection Hunter Mountain Region 4
12. Forest Harvest Survey
13. Franklin County Fire Coordinator Demonstration
14. Jeddo Creek Superfund Stream Survey
15. Migration Study Region 4
16. Mine Cave Bat Survey
17. NYS Incident Management Team Training DHSES SPTC
18. Phragmites Survey
19. Ranger Rescue Rope Training
20. Ranger Water Recue Training
21. Ranger Wildfire Refresher training
22. Salmon River Corridor Survey
23. Sandy Pond Lake Ontario Emergency Flood Response
24. Southern Pine Beetle Survey Long Island
25. Staten Island Spill Response
26. Turkey Survey Region 4
27. UAS Vessel Test
28. Waterfowl Identification Survey Region 4
29. West Point Spill

IN- PROGRESS

30. Frontier Town Mapping Survey
31. Katterskill Falls Survey
32. Mudboil Survey
33. Peconic Headwater Grassland Prescribed Burn Region 1
34. Ranger Airboat Training
35. Ranger Whiteface Gondola Training
36. Raquette River Search Mission
37. Rocky Point Forest Slash Prescribed Fire
38. Rocky Point Grassland Prescribed Fire
39. Young Forest Initiative Habitat Survey

Regulations

Recreational/Hobby: UAS utilized for personal use only. Cannot be utilized for any financial gain activities whether direct or indirect, regardless if the pilot gets compensated or not.

Section 333: Allows the UAS to be utilized for commercial purposes. If granted the UAS must be flown on specific approved activates and flown by a licensed and current airplane pilot.

Petitions Granted	Petitions Closed
5,551	1,780
As of 09/28/2016	

COA: Certificate of Authorization – Issued by FAA to allow a public operator to fly a specific UAS activity.

eCOA: Emergency Certificate of Authorization – broadens the COA specific UAS activity to include emergencies.

Part 107 (remote pilot airman certificate): An FAA issued UAS pilot license to fly commercial, public or some other non-hobby/recreational activities. Effective 8/29/16.

Regulations

NYSDEC UAS pilots must hold a **FAA UAS Part 107 License,** complete **DEC UAS Training** and are required to follow the **DEC SOP**.

- Safety is paramount
- Operating only approved state owned/registered aircraft
- Comply with all Flight Request Procedures and Reporting Requirements

Operate under the authority of either the **COA, eCOA or Part 107** depending on the requirements of the mission.

First step to become a NYSDEC UAS Pilot:

1) Successfully pass the Part 107 FAA written exam (exam encompasses Private Pilot ground school material and drone regulations) and be vetted by the TSA

or

2) Hold a current Part 61 manned pilot license and complete an FAA online exam and be vetted by the TSA

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DEC UAS Registration and Licensing

- All RPIC's must hold a valid FAA Part 107 UAS license.
- Only Department registered UAS aircraft can be utilized.

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Elements of Success

Gained support from upper management and executive

Building a UAS program from the ground-up requires staff, funding and resources something executive and upper management can provide.

- Educated Executives on UAS regulation and potential uses
  - Q and A and exchange of information

Create Buy-in at the Top

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Elements of Success

Create a Cadre and Develop a Con-Ops

Created a task force to examine regulations, operations, and equipment.

- General Counsel
- Aviation – Part 61 Pilots- Part 107 Pilots
- Photogrammetry/ GIS Mapping
- Multi-disciplinary experts

- Formed an FAA contact
- Attended conferences and reached out to expert groups
- Networked with other state organizations

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Elements of Success

Initiated a pilot program to test efficacy of technology

Canvassed for staff in the Agency

- Law Enforcement
- Engineers
- Research Scientists
- Biologists
- Foresters
- Aviation Pilots

Attended training with SkyOp and NUAIR Test Site

MAKING FUTURE SKIES SAFER
NUAIR

SKYOP®

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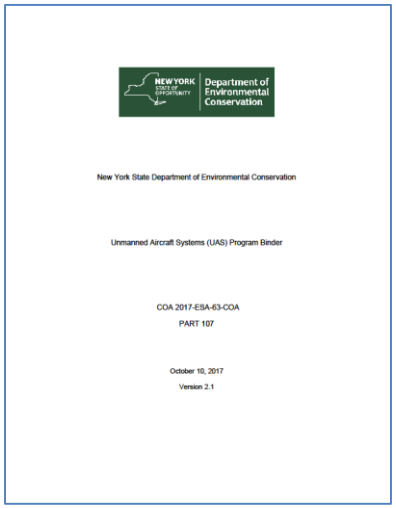
Standard Operating Procedures Manual

Developed a Standard Operating Procedure Manual

Elements

- UAS Program Guidelines
- UAS Program Procedures and Aircraft Request Process
- RPIC UAS Field Operations
- UAS Program Reporting and Forms
- FAA Authorizations
- Designated UAS Training Areas
- Supplemental



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DEC UAS Program Guidelines

(1) The UAS Program Binder must be on-site and available for all UAS operations. The RPIC must keep his/her UAS Program Binder current with all necessary updates, additions, or deletions, as provided by the Aviation Coordinator.

(2) Department issued drones should only be used by Department Certified UAS Operators acting in his/her official capacity as a DEC employee.

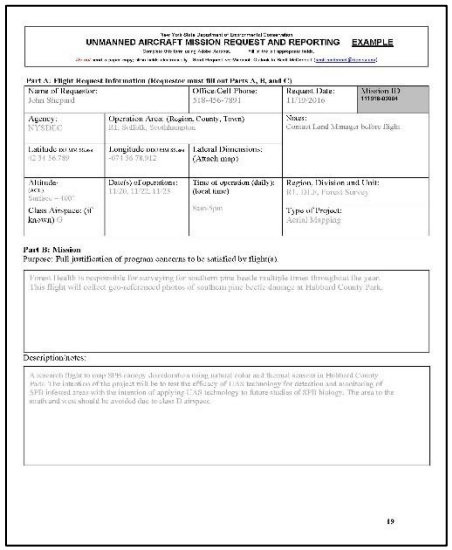
(3) Department Certified UAS Operators should not use DEC issued drones for personal use or for any purpose that is not authorized in advance by the Commissioner or Aviation Coordinator or his designee.

(4) Department Certified UAS Operators should not use personal drones for work-related purposes.

UAS Program Procedures and Aircraft Request Process

Develop guidelines for operations that encompasses the FAA regulations you will be operating.

- Approval Processes
  - Emergency
  - Non-Emergency
- Stand Operating Procedures
  - Requirements for operation
    - Record Keeping
    - Equipment Maintenance
    - Discrepancy Tracking
    - Safety Tracking



UNMANNED AIRCRAFT MISSION REQUEST AND REPORTING EXAMPLE

Part A: Flight Request Information (Requestor must fill out Parts A, B, and C)

Name of Requestor: John Shepard	Office Cell Phone: 518-956-7951	Request Date: 11/19/2016	Mission ID: 111916-0101
Agency: NYSDEC	Operation Area: (Region, County, Town) R1, Suffolk, Southampton		Hours: Contact Land Manager before Flight
Latitude: 40.88789	Longitude: -072.96.78.812	Lateral Dimensions: (Attach map)	
Altitude: (AGL) Surface – 400' Class Airspace: (if known) G	Date(s) of operations: 11/20, 11/22, 11/23	Time of operation (daily): (local time) 8am-5pm	Region, Division and Unit: R1, D1,2, Forest Survey Type of Project: Aerial Mapping

Part B: Mission

Purpose: Full justification of program concerns to be satisfied by flight(s).

Forest Health is responsible for surveying for southern pine beetle multiple times throughout the year. This flight will collect geo-referenced photos of southern pine beetle damage at Halsband County Park.

Description/notes:

A research flight to map SPB energy disorder/loss using natural color and thermal sensors in Halsband County Park. The intention of this project will be to test the efficacy of UAS technology for detection and monitoring of SPB infested areas with the intention of applying UAS technology to future studies of SPB biology. The area to the south and west should be avoided due to class D airspace.

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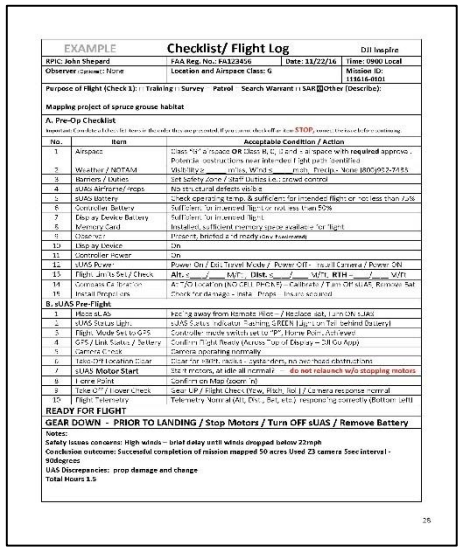

EXAMPLE Checklist/ Flight Log DJI Inspire

RPIC: John Shepard	AAA Reg. No.: FA123456	Date: 11/22/16	Time: 0900 Local
Observer (Optional): None	Location and Airspace Class: G		Mission ID: 111616-0101

Purpose of Flight (Check 1): ☐ Training ☐ Survey ☐ Patrol ☐ Search Warrant ☐ SAR ☒ Other (Describe):

Mapping project of spruce grouse habitat

A. Pre-Op Checklist

Important Condition/Action: If item is checked, do not use sUAS and STOP, contact technical assistance.

No.	Item	Acceptable Condition / Action
1	Airspace	Class "G" airspace OR Class B, C, D and E airspace with required approval. Potential obstructions near intended Flight path Identified
2	Weather / NOTAM	Visibility 3 ____ miles, Wind 5 ____ mph, Precip.: None (800)992-7433
3	Barriers / Duties	Set safety zone / staff duties i.e.: crowd control
4	sUAS Airframe/ Props	No structural defects visible
5	sUAS Battery	Check operating temp. & sufficient for intended Flight or not less than 75%
6	Controller Battery	Sufficient for intended Flight or not less than 50%
7	Display Device Battery	Sufficient for intended Flight
8	Memory Card	Installed, sufficient memory space available for Flight
9	Observer	Present, briefed and ready to assume control
10	Display Device	On
11	Controller Power	On
12	sUAS Power	Power On / Est. Travel Mode / Power Off – Install Camera / Power ON
13	Flight Jin to Set / Check	Alt. ____ MP; Dist. ____ MP; RTH – ____ MP
14	Compass Calibration	ATTI Location (NO GPS PANIC) – Calibrate / Turn OFF sUAS, Remove Set
15	Install Propellers	Check for damage – install. Props – insure secured

B. sUAS Pre-Flight

1	Hand sUAS	Hold away from Human, Wait – Hardware set, Turn ON sUAS
2	sUAS Status Light	sUAS Status Indicator Flashing GREEN (Ignition Tel. behind Battery)
3	Flight Mode Set to GPS	Controller mode switch set to "P", Home Point Achieved
4	GPS / Link Status / Battery	Confirm Flight Ready (Across Top of Display – 2R Go App)
5	Camera Check	Camera operating normally
6	Take-Off Location Clear	Clear for take, risks – bystanders, no overhead obstructions
7	sUAS Motor Start	Start motors, at idle all normals – do not relaunch w/o stopping motors
8	Home Point	Confirm on Map (appr. ft)
9	Take-Off / Hover Check	Gear UP / Flight Check (Yaw, Pitch, Roll) / Camera response normal
10	Flight Telemetry	Telemetry Normal (Alt, Dist., Bat, etc.) responding correctly (Bottom Left)

READY FOR FLIGHT

GEAR DOWN - PRIOR TO LANDING / Stop Motors / Turn OFF sUAS / Remove Battery

Notes:
Safety issues concerns: High winds – brief delay until winds dropped below 22mph
Conclusive outcome: Successful completion of mission mapped 50 acres Used Z5 camera 5sec interval - 90degrees
UAS Discrepancies: prop damage and change
Total Hours 3.5

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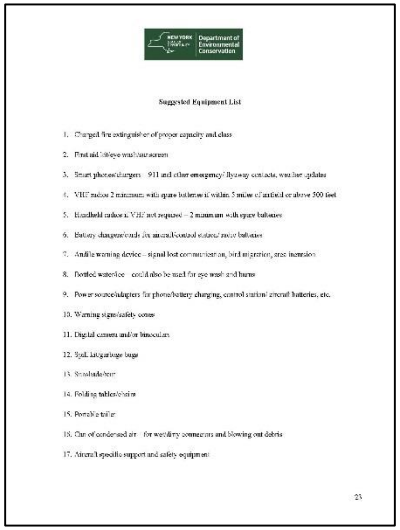
RPIC UAS Field Operations

Develop guidelines for operations that encompasses the FAA regulations you will be operating.

- Suggest Equipment List
- Pre Flight Briefing Guide
- Certified Equipment List
- Risk Assessment
- Checklist


Suggested Equipment List

1. Charged fire extinguisher of proper capacity and class
2. First aid kit/eye wash/sunscreen
3. Smart phones/chargers – 911 and other emergency/flyaway contacts, weather updates
4. VHF radios 2 minimum with spare batteries if within 5 miles of airfield or above 500 feet
5. Handheld radios if VHF not required – 2 minimum with spare batteries
6. Battery chargers/cords for aircraft/control station/ radio batteries
7. Audible warning device – signal lost communication, bird migration, area incursion
8. Bottled water/ice – could also be used for eye wash and burns
9. Power source/adapters for phone/battery charging, control station/ aircraft batteries, etc.
10. Warning signs/safety cones
11. Digital camera and/or binoculars
12. Spill kit/garbage bags
13. Sunshade/tent
14. Folding tables/chairs
15. Portable toilet
16. Can of condensed air – for wet/dirty connectors and blowing out debris
17. Aircraft specific support and safety equipment

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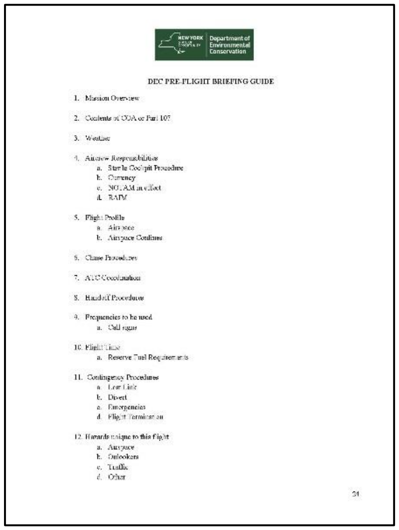
DEC PRE-FLIGHT BRIEFING GUIDE

1. Mission Overview
2. Contents of COA or Part 107
3. Weather
4. Aircrew Responsibilities
   a. Sterile Cockpit Procedure
   b. Currency
   c. NOTAM in effect
   d. RAIM
5. Flight Profile
   a. Airspace
   b. Airspace Confines
6. Chase Procedures
7. ATC Coordination
8. Handoff Procedures
9. Frequencies to be used
   a. Call signs
10. Flight Time
   a. Reserve Fuel Requirements
11. Contingency Procedures
   a. Lost Link
   b. Divert
   c. Emergencies
   d. Flight Termination
12. Hazards unique to this flight
   a. Airspace
   b. Onlookers
   c. Traffic
   d. Other

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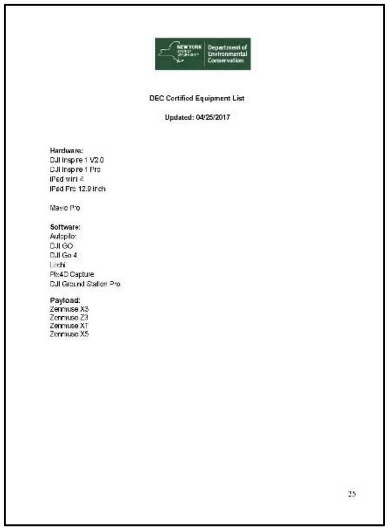
DEC Certified Equipment List

Updated: 04/25/2017

Hardware:
DJI Inspire 1 V2.0
DJI Inspire 1 Pro
IPad mini 4
IPad Pro 12.9 inch

Mavic Pro

Software:
Autopilot
DJI GO
DJI Go 4
Litchi
Pix4D Capture
DJI Ground Station Pro

Payload:
Zenmuse X3
Zenmuse Z3
Zenmuse XT
Zenmuse X5

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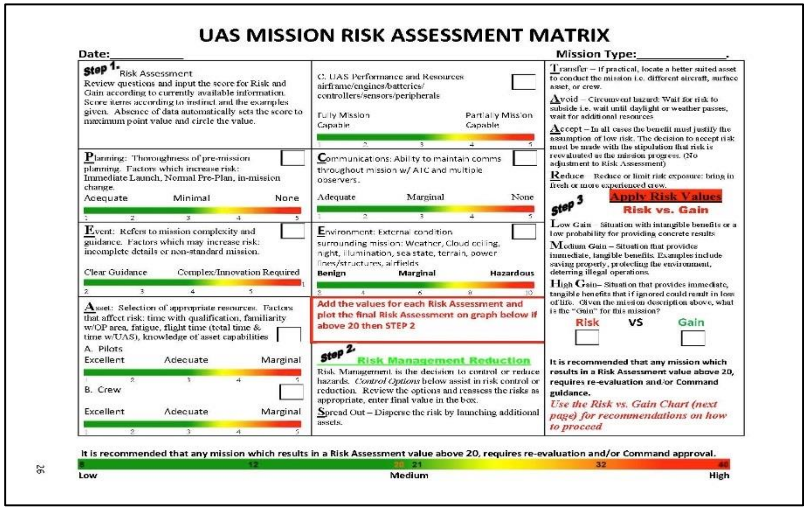
UAS MISSION RISK ASSESSMENT MATRIX

Date:
Mission Type:

Step 1. Risk Assessment
Review questions and input the score for Risk and Gain according to currently available information. Score items according to instinct and the examples given. Absence of data automatically sets the score to maximum point value and circle the value.

Planning: Thoroughness of pre-mission planning. Factors which increase risk: Immediate Launch, Normal Pre-Plan, in-mission change.
Adequate – Minimal – None

Event: Refers to mission complexity and guidance. Factors which may increase risk: incomplete details or non-standard mission.
Clear Guidance – Complex/Innovation Required

Asset: Selection of appropriate resources. Factors that affect risk: time with qualification, familiarity w/OP area, fatigue, flight time (total time & time w/UAS), knowledge of asset capabilities
A. Pilots
Excellent – Adequate – Marginal
B. Crew
Excellent – Adequate – Marginal

C. UAS Performance and Resources airframe/engines/batteries/controllers/sensors/peripherals
Fully Mission Capable – Partially Mission Capable

Communications: Ability to maintain comms throughout mission w/ ATC and multiple observers.
Adequate – Marginal – None

Environment: External condition surrounding mission: Weather, Cloud ceiling, night, illumination, sea state, terrain, power lines/structures, airfields
Benign – Marginal – Hazardous

Add the values for each Risk Assessment and plot the final Risk Assessment on graph below if above 20 then STEP 2

Step 2. Risk Management Reduction
Risk Management is the decision to control or reduce hazards. Control Options below assist in risk control or reduction. Review the options and reassess the risks as appropriate, enter final value in the box.
Spread Out – Disperse the risk by launching additional assets.

Transfer – if practical, locate a better suited asset to conduct the mission i.e. different aircraft, surface asset, or crew.
Avoid – Circumvent hazard: Wait for risk to subside i.e. wait until daylight or weather passes, wait for additional resources
Accept – In all cases the benefit must justify the assumption of low risk. The decision to accept risk must be made with the stipulation that risk is reevaluated as the mission progresses. (No adjustment to Risk Assessment)
Reduce – Reduce or limit risk exposure: bring in fresh or more experienced crew.

Step 3. Apply Risk Values
Risk vs. Gain
Low Gain – Situation with intangible benefits or a low probability for providing concrete results
Medium Gain – Situation that provides immediate, tangible benefits. Examples include saving property, protecting the environment, deterring illegal operations.
High Gain – Situation that provides immediate, tangible benefits that if ignored could result in loss of life. Given the mission description above, what is the "Gain" for this mission?
Risk VS Gain

It is recommended that any mission which results in a Risk Assessment value above 20, requires re-evaluation and/or Command guidance.
Use the Risk vs. Gain Chart (next page) for recommendations on how to proceed

It is recommended that any mission which results in a Risk Assessment value above 20, requires re-evaluation and/or Command approval.
Low – Medium – High

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EXAMPLE Checklist/ Flight Log DJI Inspire
RPIC: John Shepard
FAA Reg. No.: FA123456
Date: 11/22/16
Time: 0900 Local
Location and Airspace Class: G
A. Pre-Op Checklist
B. sUAS Pre-Flight
READY FOR FLIGHT
GEAR DOWN – PRIOR TO LANDING / Stop Motors / Turn OFF sUAS / Remove Battery

UAS Program Reporting and Forms

Develop guidelines for operations that encompasses the FAA regulations you will be operating.

- Aircraft maintenance Log
- Pilot Log
- Discrepancy Report
- Safety Bulletin
- Equipment Certification
- Flight Function Checklist
- Land Owner Consent
- Forest Preserve Work Plan

DEC UAS SAFETY BULLETIN

Date: 11/20/2016

Area of Concern: Flight Safety

A/C: DJI Inspire 1

Equipment/Component: Firmware V2.1.1

Discussion: DJI Inspire firmware V2.1.1 has shown to cause non-response errors with initiation of the return-to-home function button on the main controller.

Recommendation: Do not update to V2.1.1 or rollback to previous firmware V2.0

Distribution: All aviation activities

/s/

Aviation Coordinator

EXAMPLE

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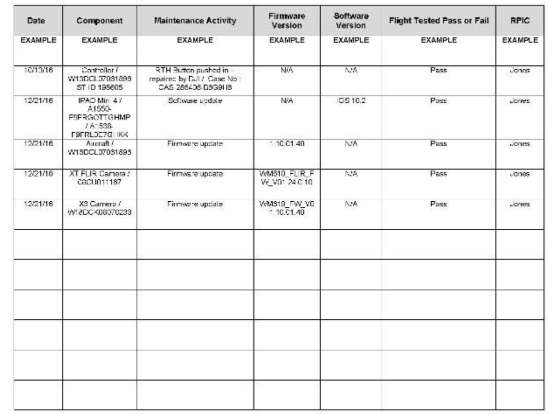
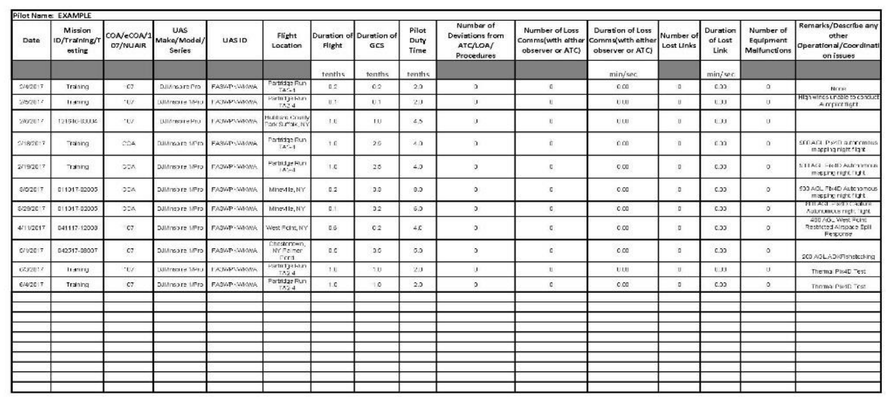


Date	Component	Maintenance Activity	Firmware Version	Software Version	Flight Tested Pass or Fail	RPIC
EXAMPLE	EXAMPLE	EXAMPLE	EXAMPLE	EXAMPLE	EXAMPLE	EXAMPLE
10/13/16	Controller / W13DCL07081898 ST ID 196605	RTH Button pushed in – repaired by DJI / Case No : CAS 285406 D3G9H8	N/A	N/A	Pass	Jones
12/21/16	IPAD Mini 4 / A1550-F9FRGOTTGHMP / A1538-F9FRLDE7GHKK	Software update	N/A	IOS 10.2	Pass	Jones
12/21/16	Aircraft / W13DCL07081898	Firmware update	1.10.01.40	N/A	Pass	Jones
12/21/16	XT FLIR Camera / 08CU011187	Firmware update	WM610_FLIR_FW_V01.24.0.10	N/A	Pass	Jones
12/21/16	X3 Camera / W18DCK06070233	Firmware update	WM610_FW_V01.10.01.40	N/A	Pass	Jones



Pilot Name: EXAMPLE

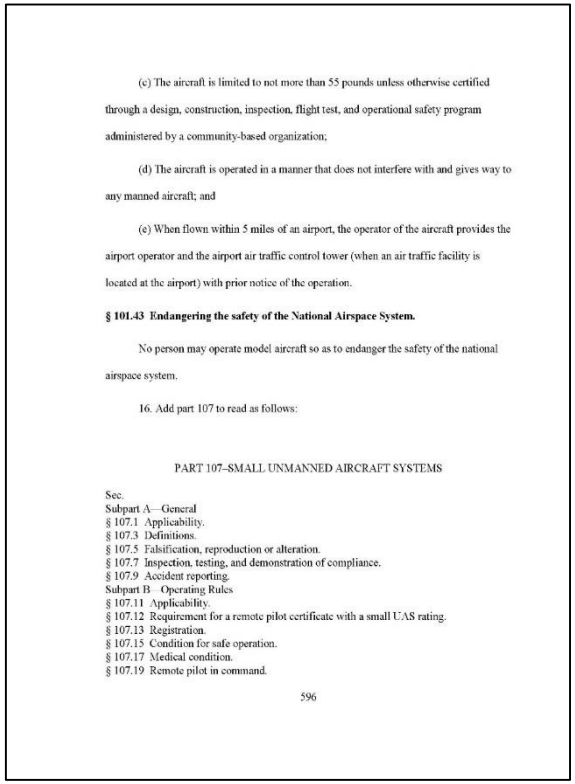
Date	Mission ID/Training/Testing	COA/eCOA/107/NUAIR	UAS Make/Model/Series	UAS ID	Flight Location	Duration of Flight	Duration of GCS	Pilot Duty Time	Number of Deviations from ATC/LOA/Procedures	Number of Loss Comms(with either observer or ATC)	Duration of Loss Comms(with either observer or ATC)	Number of Lost Links	Duration of Lost Link	Number of Equipment Malfunctions	Remarks/Describe any other Operational/Coordination issues
						tenths	tenths	tenths			min/sec		min/sec		
2/4/2017	Training	107	DJI Inspire Pro	FA3WP4WKWA	Partridge Run TA2-4	0.2	0.2	2.0	0	0	0.00	0	0.00	0	None
2/5/2017	Training	107	DJI Inspire 1/Pro	FA3WP4WKWA	Partridge Run TA2-4	0.1	0.1	2.0	0	0	0.00	0	0.00	0	High winds unable to conduct Airmap flight
2/6/2017	121616-00004	107	DJI Inspire Pro	FA3WP4WKWA	Hubbard County Park Suffolk, NY	1.0	1.0	4.5	0	0	0.00	0	0.00	0	
2/18/2017	Training	COA	DJI Inspire 1/Pro	FA3WP4WKWA	Partridge Run TA2-4	1.0	2.5	4.0	0	0	0.00	0	0.00	0	500 AGL Pix4D autonomous mapping night flight
2/19/2017	Training	COA	DJI Inspire 1/Pro	FA3WP4WKWA	Partridge Run TA2-4	1.0	2.5	4.0	0	0	0.00	0	0.00	0	500 AGL Pix4D Autonomous mapping night flight
3/3/2017	011017-02005	COA	DJI Inspire 1/Pro	FA3WP4WKWA	Mineville, NY	0.2	0.8	8.0	0	0	0.00	0	0.00	0	500 AGL Pix4D Autonomous mapping night flight
3/29/2017	011017-02005	COA	DJI Inspire 1/Pro	FA3WP4WKWA	Mineville, NY	0.1	0.2	6.0	0	0	0.00	0	0.00	0	[illegible] Autonomous night flight
4/11/2017	041117-12003	107	DJI Inspire 1/Pro	FA3WP4WKWA	West Point, NY	0.6	0.2	4.0	0	0	0.00	0	0.00	0	400 AGL West Point Restricted Airspace Spill Response
5/1/2017	042517-08007	107	DJI Inspire 1/Pro	FA3WP4WKWA	Chestertown, NY Palmer Pond	0.6	3.0	5.0	0	0	0.00	0	0.00	0	200 AGL ADK Fishstocking
6/3/2017	Training	107	DJI Inspire 1/Pro	FA3WP4WKWA	Partridge Run TA2-4	1.0	1.0	2.0	0	0	0.00	0	0.00	0	Thermal Pix4D Test
6/4/2017	Training	107	DJI Inspire 1/Pro	FA3WP4WKWA	Partridge Run TA2-4	1.0	1.0	2.0	0	0	0.00	0	0.00	0	Thermal Pix4D Test

NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

FAA Authorizations

Develop guidelines for operations that encompasses the FAA regulations you will be operating.

- Part 107
- Blanket COA
- FAA Test Site COA



(c) The aircraft is limited to not more than 55 pounds unless otherwise certified through a design, construction, inspection, flight test, and operational safety program administered by a community-based organization;

(d) The aircraft is operated in a manner that does not interfere with and gives way to any manned aircraft; and

(e) When flown within 5 miles of an airport, the operator of the aircraft provides the airport operator and the airport air traffic control tower (when an air traffic facility is located at the airport) with prior notice of the operation.

§ 101.43 Endangering the safety of the National Airspace System.

No person may operate model aircraft so as to endanger the safety of the national airspace system.

16. Add part 107 to read as follows:

PART 107–SMALL UNMANNED AIRCRAFT SYSTEMS

Sec.
Subpart A—General
§ 107.1 Applicability.
§ 107.3 Definitions.
§ 107.5 Falsification, reproduction or alteration.
§ 107.7 Inspection, testing, and demonstration of compliance.
§ 107.9 Accident reporting.
Subpart B—Operating Rules
§ 107.11 Applicability.
§ 107.12 Requirement for a remote pilot certificate with a small UAS rating.
§ 107.13 Registration.
§ 107.15 Condition for safe operation.
§ 107.17 Medical condition.
§ 107.19 Remote pilot in command.

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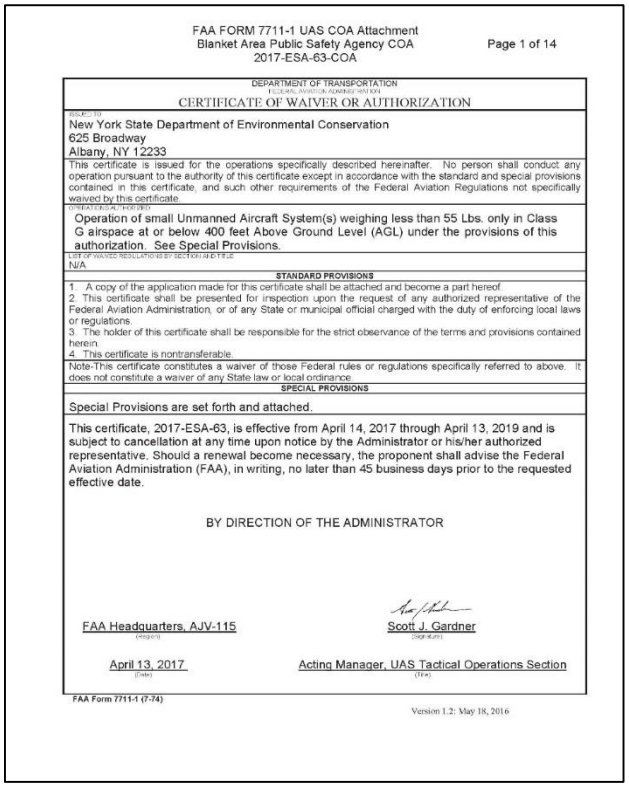

FAA FORM 7711-1 UAS COA Attachment
Blanket Area Public Safety Agency COA
2017-ESA-63-COA
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DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION
CERTIFICATE OF WAIVER OR AUTHORIZATION

ISSUED TO
New York State Department of Environmental Conservation
625 Broadway
Albany, NY 12233

This certificate is issued for the operations specifically described hereinafter. No person shall conduct any operation pursuant to the authority of this certificate except in accordance with the standard and special provisions contained in this certificate, and such other requirements of the Federal Aviation Regulations not specifically waived by this certificate.

OPERATION AUTHORIZED
Operation of small Unmanned Aircraft System(s) weighing less than 55 Lbs. only in Class G airspace at or below 400 feet Above Ground Level (AGL) under the provisions of this authorization. See Special Provisions.

LIST OF WAIVED REGULATIONS BY SECTION AND TITLE
N/A

STANDARD PROVISIONS
1. A copy of the application made for this certificate shall be attached and become a part hereof.
2. This certificate shall be presented for inspection upon the request of any authorized representative of the Federal Aviation Administration, or of any State or municipal official charged with the duty of enforcing local laws or regulations.
3. The holder of this certificate shall be responsible for the strict observance of the terms and provisions contained herein.
4. This certificate is nontransferable.

Note-This certificate constitutes a waiver of those Federal rules or regulations specifically referred to above. It does not constitute a waiver of any State law or local ordinance.

SPECIAL PROVISIONS
Special Provisions are set forth and attached.

This certificate, 2017-ESA-63, is effective from April 14, 2017 through April 13, 2019 and is subject to cancellation at any time upon notice by the Administrator or his/her authorized representative. Should a renewal become necessary, the proponent shall advise the Federal Aviation Administration (FAA), in writing, no later than 45 business days prior to the requested effective date.

BY DIRECTION OF THE ADMINISTRATOR

FAA Headquarters, AJV-115 (Region)
Scott J. Gardner (Signature)
April 13, 2017 (Date)
Acting Manager, UAS Tactical Operations Section (Title)

FAA Form 7711-1 (7-74)
Version 1.2: May 18, 2016

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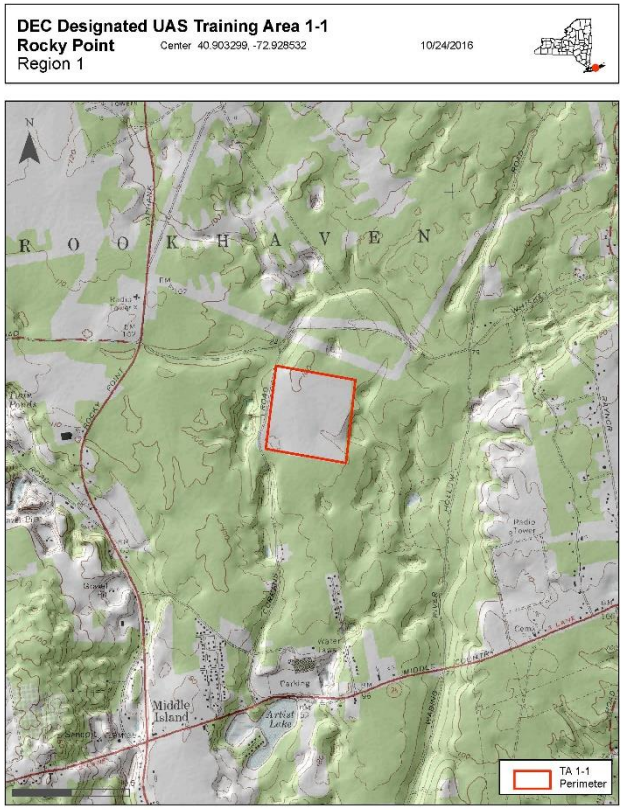
Department of Environmental Conservation

Designated UAS Training Areas



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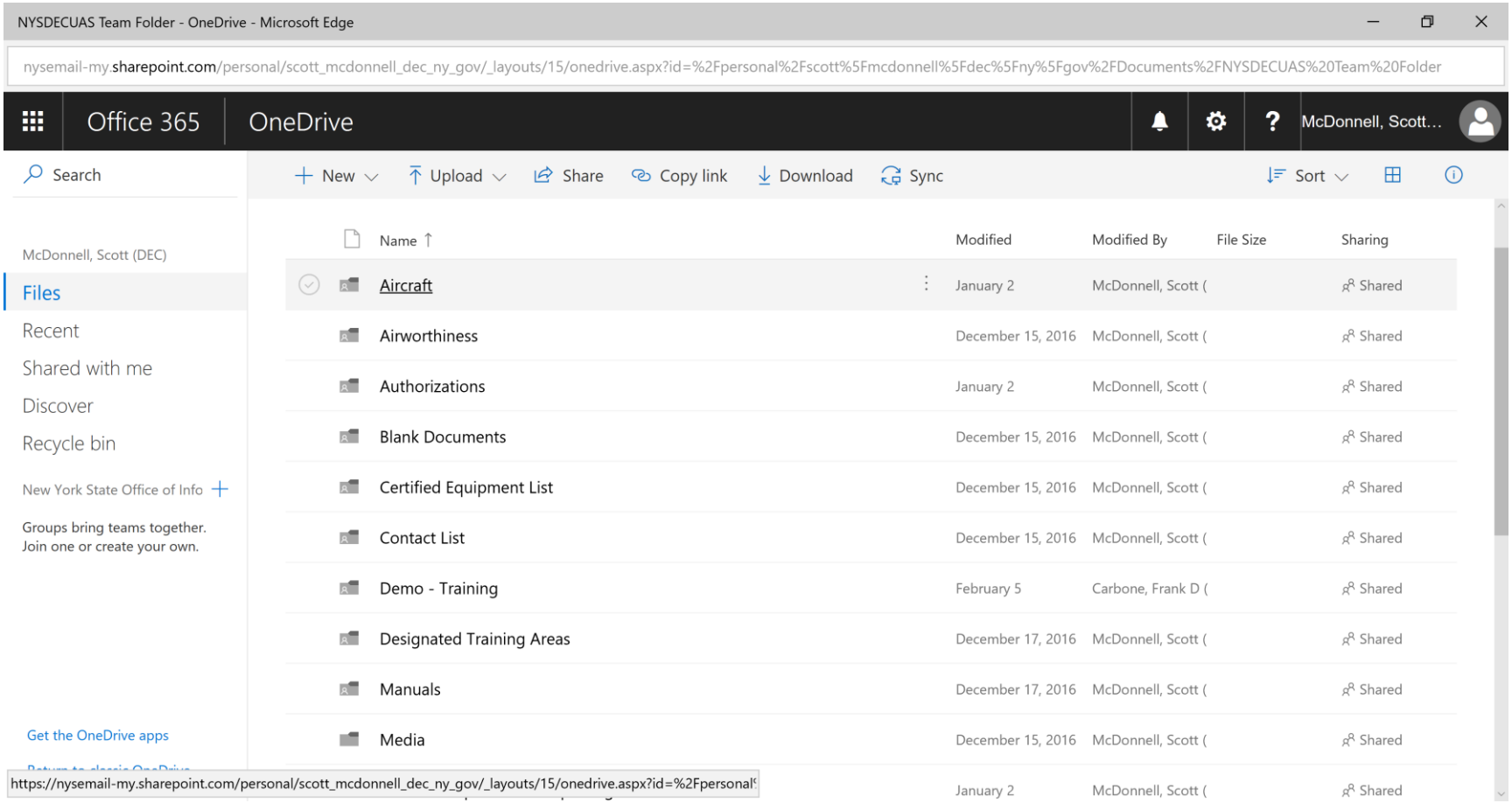
Data Storage and Sharing



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Elements of Success

Report Successes to Executive and Scale Program

- Developed training program based on pilot project outcome.
- Expanded aircraft fleet based on field operations feedback.
- Expanded staff to include subject matter experts.
- Generated cost savings report for executive and management and budget.
- Generated outreach material showing successes.

NEW YORK STATE OF OPPORTUNITY
Department of Environmental Conservation

Lessons Learned

UAS technology sells itself, present it to an executive audience and gain support.

Don’t reinvent the wheel ask around someone else has done it before.

Don’t work in a vacuum.

Hire the right people to support program growth.

Outreach is import for creating the correct perception of UAS technology.