



**DEPARTMENT of PUBLIC SAFETY**  
**Office of Risk**  
**&**  
**Emergency Management**

**Indoor Unmanned Aerial Systems  
Administrative Policy**

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**EMU-REM-IUAS-00**

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## **PURPOSE**

Eastern Michigan University (EMU) is committed to enhancing the safety of the campus community by integrating best practices for campus safety and security when unmanned aerial systems are deployed on campus indoors.

## **SCOPE**

This Administrative Policy is applicable to all students, faculty, staff, and vendors, regarding the use of an indoor unmanned aerial system (UAS) by anyone on the Eastern Michigan University properties, including Parson, Fish Lake, and EagleCrest. Indoor use of a drone at EMU must have a completed and approved [Checklist](#) onsite for review by Environmental, Health & Safety.

This Administrative Policy covers UAS flights in general public spaces (atriums, conference rooms, lobbies, etc.) as well as classrooms and laboratories.

## **UAS PURCHASE**

The purchase of AUS/Drones needs the approval of the Assistant Vice President for Academic Research & Regulatory Compliance, Chief Information Officer (CIO) and Director for Environmental Health & Safety and must be on the [U.S. Department of Interior Blue UAS Cleared List](#).

Assistant Vice President for Academic Research & Regulatory Compliance role is to review that the purchase aligns with the all-regulatory guidelines and import/export rules. CIO's role is to review any software that may impact EMU's computing systems. The role of Director for Environmental Health & Safety is to ensure that a completed and approved [Checklist](#) is on file for use in a classroom or laboratory.

## **ADMINISTRATIVE POLICY MAINTENANCE**

The Department of Public Safety's Risk & Emergency Management is responsible for the maintenance of this Administrative Policy.

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**DEFINITIONS**

**Controlled Area** - An area that is not accessible to spectators or the general public. Controlled areas include, but are not limited to, classrooms and research laboratories.

**Flight Zone** - An area that is reserved for indoor UAS flight activities. The flight zone is clearly demarcated by cones or other visible means to keep people out who are not directly involved with the UAS mission. The flight zone is determined by the Facility Manager/Building Administrator in collaboration with the UAS team.

**General Public Area** - An area that can be accessible to spectators or people not affiliated with an indoor UAS mission. Examples include, but are not limited to, building atriums and lobbies.

**Indoor Area** - A structure consisting of walls and a roof capable of containing the flight of a UAS.

**Mission Safety Personnel** - Mission safety personnel are trained to help prevent mishaps and ensure the safety of personnel and operations.

**Remote Pilot in Command** - The pilot in command (RPIC) is the person in charge of an aircraft's safe operation and safety during flight. The RPIC is responsible for the aircraft's operation and is the final authority on all safety and operational matters.

**Unmanned Aerial Systems** - Unmanned aerial systems (UAS), also known as drones, are aircraft that can be operated without direct human intervention.

**Unmanned Aerial Systems Host** – is the EMU employee who has been hired or appointed to work directly with the UAS company on the work to be performed.

**Visual Line of Sight** - Visual line of sight (VLOS) is the ability to see a drone or aircraft without any obstructions, such as pillars/columns, walls, staircases, curtains, sprinkler heads, etc. The term is often used in the context of drone operations, where it is a critical concept for ensuring the safety of the national airspace.

**Visual Observer** - A visual observer (VO) is a trained crew member who helps a pilot ensure a safe flight by monitoring the drone and identifying hazards.

**ADMINISTRATIVE POLICY**

Appendix A and the EMU UAS application must be completed and submitted to EMU for approval.

Any indoor use must also operate in accordance with the procedures of this

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Administrative Policy.

The EMU UAS Host must seek approval from the Facility Manager or Building Administrator to ensure they can accommodate the request in accordance with this Administrative Policy.

## **RESPONSIBILITY**

### **UAS Flight Team**

The UAS Flight team consists of the Pilot in Command, the Visual Observer(s), and the Mission Safety Personnel. The roles and responsibilities for each of these important positions are described below.

### **Remote Pilot in Command (RPIC)**

- The Pilot of the UAS shall be the RPIC and shall have the ultimate responsibility for the safe operation of the UAS.
- The RPIC has the final decision on whether to initiate or terminate any flight.
- The RPIC will evaluate each mission. It is the RPIC's responsibility to recognize risks and refuse all missions that may present unacceptable risks. The RPIC's word is final as to whether the flight is safe to conduct.
- The RPIC will comply with the EMU UAS Host or other EMU official's request that a mission be terminated if they feel the mission is unsafe.
- Before launch, the RPIC must understand the mission request and have all applicable documentation available upon request.
- The RPIC must be aware of all hazards associated with the flight zone. These hazards include but are not limited to the building's infrastructure and spectator areas.
- The RPIC must keep all UAS operations within the visual line of sight (VLOS).
- The RPIC must determine the size classification of the UAS based on the table below:

Group 1	Micro	UAS is less than 1 pound
Group 2	Small	UAS is between 1 pound and 4 pounds
Group 3	Medium	UAS is between 4 pounds and 6.5 pounds
Group 4	Large	UAS is greater than 6.5 pounds

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- Qualifications and training:
  - The RPIC must safely operate the UAS in all situations. This includes maintaining safe distances from persons and building structures and completing effective evasive and emergency maneuvers when necessary.
  - The RPIC must be in a physical and mental condition that will not interfere with the safe operation of the UAS.
  - The RPIC must read and be familiar with the contents of this Administrative Policy and the UAS-specific Operator's Manual.

#### **Visual Observer (*Applicable Only for General Public Spaces*)**

- The visual observer (VO) will be assigned by the RPIC.
- All indoor UAS missions in general public settings require at least one VO to offer a viewpoint that is distinct from the RPIC.
- The VO will assist and advise the RPIC in maintaining situational awareness and complying with RPIC's "see-and-avoid" duties.
- The VO will maintain a view of the flight zone and surrounding areas to identify potential emerging hazards.
- The VO will maintain communication with the RPIC at all times.
- Qualifications and training:
  - The VO must have a thorough understanding of all normal, abnormal, and emergency aspects of the UAS and the UAS mission.
  - The VO must understand the safe operation of the UAS in all situations. This includes an understanding of safe distances from persons and structures and how evasive and emergency procedures will be executed.
  - The VO must be briefed by the RPIC prior to each flight to ensure a consistent understanding of each mission.
  - The VO must read and be familiar with the contents of this Administrative Policy.

#### **Mission Safety Personnel (*Applicable Only for General Public Spaces*)**

- Mission safety personnel will be assigned by the RPIC.
- All indoor UAS missions in general public settings must have at least one safety person.
- Mission safety personnel will be positioned outside of the flight zone and will alert the RPIC and/or the VO of any potential emerging hazards.
- In the event of a building fire alarm or any other type of emergency, mission safety personnel will remove any cones or visible markers to allow egress through the flight zone.
- Mission safety personnel will be familiar with the locations of emergency phones, exits, first aid kits, fire extinguishers, and any other safety equipment deemed necessary for a successful UAS mission.

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### **Facility Manager / Building Administrator (FM/BA)**

- The FM/BA has authority over the building in which the flight zone is located.
- Indoor UAS missions will only occur with explicit permission of the FM/BA.
- The FM/BA can revoke this permission at any time, including issuing real-time requests for the RPIC to immediately and safely recover or terminate the UAS mission.

### **EMU UAS Host**

- Secures authorization for the flight activities from the FM/BA.
- Works with the UAS team prior to flight activities to develop a safe flight zone and identify any potential hazards associated with that flight zone.

## **PROCEDURES**

### **Laboratory or Classroom UAS Instructional Procedures**

Checklists have long been valued as the foundation for safe flight activities. Emphasis is placed on the completion of checklists and assessments for the successful completion of each indoor UAS mission.

### **General Public Area UAS Mission Procedures**

#### ***Site Assessment/Preparation***

Prior to any indoor UAS event in a general public area, members of the UAS team, EMU UAS Host, and the FM/BA will collaborate and complete the Indoor UAS Flight Passport (IFliP), located in Appendix A. The successful completion of the IFliP ensures that all individuals involved with an indoor UAS flight agree with the parameters of that mission. **Once the IFliP has been completed, it must be signed by both the RPIC, EMU UAS Host, and the FM/BA before any indoor UAS event.**

The IFliP (Appendix A) is comprised of two components:

1. **Site Hazard Assessment:** Prior to any flight, members of the UAS team, EMU UAS Host, and the FM/BA will meet and identify the flight zone. All potential hazards associated with this flight zone will be identified. The Site Hazard Assessment is found in the IFliP.
2. **Site Preparation:** After the Site Hazard Assessment has been completed, the UAS team will collaborate with the EMU UAS Host, and FM/BA to prepare the flight zone. The flight zone preparation will be done in accordance with the IFliP.

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**FLIGHT OPERATIONS**

A successful indoor UAS mission is contingent upon thorough planning. After gaining indoor flight site approval from the FM/BA through the completion of the IFliP, the UAS team can move forward to actual flight operations

**Normal UAS Preflight and Postflight Activities**

Although there are many variables that go into a given UAS flight, there are some basic steps that can be taken to guarantee that the mission is completed as safely as possible.

- **Preflight Activities:** Before each indoor UAS mission, the RPIC must perform a preflight inspection of the UAS to ensure that it is in a condition for safe operation. The preflight inspection should be conducted in accordance with the manufacturer’s preflight inspection procedures. Additional preflight items that should be completed focus on UAS team roles, contingency plans, and overall flight zone preparedness. A detailed preflight checklist can be found in the Indoor UAS Flight Operations Checklist (Appendix B).
- **Post-flight Activities:** After each indoor UAS mission, steps should be taken to ensure that the UAS is de-energized and stored properly. This post-flight inspection should be conducted in accordance with the manufacturer’s procedures. Other potential post-flight activities are described in the Indoor UAS Flight Operations Checklist (Appendix B).

**Physical Restraint Flight Operations**

- **Tethered Flight:** All Group 3 and Group 4 UAS operations require the use of a tether. The tether must 1) be lightweight enough as to not interrupt the safe operation of the UAS and 2) be strong enough to withstand possible encounters with structures. When conducting a tethered flight, the following guidance must be followed:
  - All tethered operations require at least 4 team members: The RPIC, two anchors (who operate the tethers), and a VO.
- **Netted Flight Zone:** Although not required, netting can provide an effective means for demarcating a flight zone. This physical barrier can protect both the public and building structures from an errant UAS maneuver.
  - A netted flight zone would relieve the requirement of having mission safety personnel.
  - Propeller guards should be considered when operating within a netted enclosure to decrease the chances of entanglement.

**Appropriate and Prohibited Uses**

All indoor UAS missions must be completed in a safe and responsible manner.

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- Indoor UAS missions shall not monitor or record areas where there is a reasonable expectation of privacy in accordance with accepted social norms. These areas include but are not limited to restrooms, locker rooms, individual residential rooms, changing or dressing rooms, and health treatment rooms.
- Indoor UAS missions shall not monitor or record residential hallways, residential lounges, or the inside of campus daycare facilities or other areas where minors may be present.
- Indoor UAS missions shall not monitor or record sensitive institutional or personal information which may be found, for example, on an individual's workspace, on computer or other electronic displays.
- RPIC must obtain documented instructor permission prior to flying a UAS during a class session and while students and instructor are in the room before and/or after a class.

### **Safety Guidelines for Indoor UAS Use**

- Maintain a spare parts supply. Flying with damaged parts can affect the UAS's stabilization, causing it to fly erratically. Replace damaged or broken parts before operating a UAS.
- Fly drones specifically designed for indoor flight/operations.
- Indoors, smaller is safer. Gain prior experience by flying smaller (nano-drones or micro drones) or toy models before using mid-sized or larger drones.
- For mid-sized and larger drones, it is recommended the UAS systems have indoor positioning systems or obstacle avoiding drones. This is especially important in furnished rooms.
- Unless you have appropriate certification and experience do not fly large drones such as FPV for Phantom Size drones indoors for competitions or demonstrations.
- Avoid flying close to walls, ceilings and the floor as this can result in a crash. The flow of air is impeded as the drone gets closer to a wall, ceiling or floor. Disruptions to air flow can cause unpredictable drone movements, this danger is more pronounced with the lack of GPS stabilization.
- It is recommended to fly halfway between the floor and ceiling to counter any changes in the altitude up or down during operation.
- When possible, fly microdrones with optional propellers which will allow them to bump into walls or ceilings without crashing.
- Dial down controls. Fly at the absolute minimum speed for the drone and watch altitude climbing closely.
- Adjust flight controls and anticipate changes in drone operation.
  - Some UAS's have a pre-set configuration for indoor flying which essentially disables GPS and other visual positioning systems, sometimes called ATTI mode).
  - Anticipate drafts generated by the HVAC system, open windows and/or the

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UAS itself. Flying in an enclosed space, without GPS-stabilization, self-generated drafts from the UAS or from HVAC systems and windows can cause the UAS to move unexpectedly.

- If your UAS has the capability of remembering previous flights, use the reset button or refer to the user manual for proper reset procedures.
- Disable the Return to Home feature. This feature typically causes the UAS to gain altitude to avoid obstacles. Indoors, most likely this will result in the UAS hitting the ceiling and crashing. Without the Return to Home feature, the PIC must keep the communication between the drone and the remote controller stable. Do not fly the drone too far away and avoid any obstacles coming between the UAS and the remote controller.
- Use indoor hulls (propeller guards) when flying indoors. Some drone systems have indoor hulls which are placed on spinning rotor blades to not only protect drones from impact but also animals, furniture, people and other objects.
- Read the drone manufacturer's manual regarding the precautions to take during indoor flight/operation.
- Secure any pets and animals within the area.
- If flying the drone in a public area, post notices and markers indicating the flight area.
- Move, rearrange or remove furniture from the room to ensure the drone's flight path is not impeded.

## **DRONE DISPOSAL**

If a drone needs to be disposed of or has a leaking battery. Please contact Environmental Health and Safety. Drone should be disposed of as Universal Waste.

## **REFERENCE MATERIAL**

### **University**

[EMU Board of Regents Policy](#)

**Unmanned Aerial System Administrative Policy**

**Unmanned Aerial System Application**

### **Federal**

[FAA Drone Use Regulations and Guidance](#)

[National Science Foundation: American Security Drone Act \(12/23\) Presentation](#)

[U.S. Department of Interior Blue UAS Cleared List](#)

[U.S. Department of State Export Control](#)



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State of Michigan  
[Michigan Drone Regulations](#)  
[Unmanned Aircraft Systems Act](#)  
[Department of Natural Resources Order 5.1](#)  
[Natural Resources and Environmental Protection Act 451](#)  
[Senate Bill 992, Act 436 of 2016](#)

Other  
[Flying a Drone Indoors - Hazards and Safety Tips by Pilot Institute](#)  
[Harvard Campus Services Environmental Health and Safety Laboratory Safety](#)  
[Guideline Indoor Use of Unmanned Aerial Vehicle \(UAV\)/Drones](#)  
[Southeast Missouri State University UAS Indoor Safety Guidelines](#)

DOCUMENT AMENDMENTS

Revision	Date	Changes
0	4/23/2025	Original Program

Appendix A: Indoor UAS Flight Passport (IFliP)

The Indoor UAS Flight Passport must be completed by UAS team members in collaboration with the FM/BA prior to any indoor UAS flight inside of any EMU building. **Once the IFliP has been completed, it must be signed by the RPIC, EMU UAS Host, and the FM/BA before any flight activity.**

UAS Mission Personnel Information

Department Name: \_\_\_\_\_

PI Name: \_\_\_\_\_

RPIC Name: \_\_\_\_\_

VO Name: \_\_\_\_\_

Safety Personnel: \_\_\_\_\_

FM/BA Name: \_\_\_\_\_

EMU UAS Host: \_\_\_\_\_

Site Hazard Assessment (to be completed by UAS team and FM/BA)

TASK COMPLETED? Y/N	ASSESSMENT TASK	ASSESSMENT NOTES (Use IFliP Task Notes Page if Necessary)
	UAS team members and FM/BA have determined appropriate flight zone as defined in this Administrative Policy	Flight zone location (Building, Room #, etc.):
	The flight zone has been determined to not impede egress in the event of building fire or emergency	
	UAS team members and FM/BA have identified potential flight zone hazards. These hazards may include, but are not limited to, fire suppression equipment, ceiling fans, display areas, and any other building infrastructure that may present a hazard to a successful mission	List of potential hazards and hazard locations:

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TASK COMPLETED? Y/N	ASSESSMENT TASK	ASSESSMENT NOTES (Use IFliP Task Notes Page if Necessary)
	UAS team members and the FM/BA have identified a safe battery charging area. This area must be outside of the flight zone and a safe distance away from spectator or public area	Battery charging location:

Site Preparation

TASK COMPLETED? Y/N	SITE PREPARATION TASK	SITE PREPARATION TASK NOTES
	The flight zone (as defined in the Site Hazard Assessment) has been clearly demarcated with cones or other visible markers. The UAS will not fly beyond the demarcated area.	How is flight zone demarcated
	If necessary, physical restraints (i.e., tether or netting) have been implemented	Type of physical restraint used:
	Door signs indicating that a UAS event is in progress have been fixed to all doors leading to flight zone	

Building FM/BA Signature	Date
UAS RPIC Signature	Date
EMU UAS Host Signature	Date
EHS Director Signature	Date
Chief of Police Signature	Date

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**IFliP Task Notes**

Flight zone location (Building, Room #, etc.)
List of potential hazards and hazard locations
Battery charging location
How flight zone is demarcated
Type of restraint system in use (if required)

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## **Appendix B: Indoor UAS Flight Operations Checklist**

### **Preflight Activities**

- Establish and brief personnel on flight zone operations, launch/recovery zones, and the mission plan.
- Establish and brief personnel on contingency plans and flight termination procedures. To RPICs to consider include but are not limited to:
  - What to do in the event of a sudden energy depletion.
  - What to do if the UAS leaves the visual line of sight (VLOS).
  - What to do in the event that an unauthorized person walks into the flight zone.
  - What to do in the event of a building fire alarm.
- Ensure that the flight zone is free of spectators and hazards.
- The RPIC has inspected the UAS to ensure that it is in a condition for safe operation. This preflight inspection should be done in accordance with the UAS manufacturer's inspection procedures when available and/or an inspection procedure developed by the UAS operator.
- Verify the flight path is not impeded by obstacles.

### **Safety Activities**

- UAS is in good operating order and any damaged parts have been replaced.
- UAS to be flown indoors is appropriately sized and PIC is properly experienced.
- A flight plan has been established and discussed with PIC, MSP and VO to avoid flying the drone close to walls, ceiling and floor.
- Use of optional propellers for microdrones, if applicable.
- Flight controls have been adjusted for indoor use.
- A plan for addressing drafts and erratic behavior of the UAS have been reviewed and discussed by the PIC, MSP and VO.
- Indoor hulls/propeller guards will be used. If not, why \_\_\_\_\_.
- If flying in public areas, notices and markers are posted.
- If applicable, pets and animals are secured.
- Ensure the flight patch is not impeded by obstacles.

### **Post-Flight Activities**

- Upon landing UAS, de-energize UAS according to manufacturer's procedures.
- Communicate with safety personnel that the mission has been completed and that the UAS has been de-energized. Safety personnel will then relay this information to members of the public if necessary.
- Complete post-flight activities in accordance with the UAS manufacturer's procedures.

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## Appendix C: Purchase Approval Authorization Form

### DETAILS ABOUT THE UAS

Make, model and serial number of UAS	
MAKE: _____	
MODEL: _____	
SERIAL NUMBER OF UAS: _____	
Is the UAS on the <a href="#">Blue UAS Cleared List</a> ?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Weight of the UAS with payload (in grams and in lbs.): _____ _____	
Is the propeller system ducted or otherwise shielded?	<input type="checkbox"/> Yes <input type="checkbox"/> No
What is the intended use or purpose for the UAS? _____ _____ _____ _____	
What are the built in safety features of the drone?	<input type="checkbox"/> Return-to-home <input type="checkbox"/> Automatic Landing <input type="checkbox"/> Fail-safe mechanism <input type="checkbox"/> Obstacle avoidance <input type="checkbox"/> GPS/Navigation <input type="checkbox"/> Headless Mode <input type="checkbox"/> Build-in No Fly Detection Zones <input type="checkbox"/> Other _____
What software will the UAS or camera be using? _____ _____	

What type of camera will be used with the UAS?  <hr/> <hr/>	
Do you currently hold a Part 107 licence?	<input type="checkbox"/> Yes <input type="checkbox"/> No

Building FM/BA Signature	Date
UAS RPIC Signature	Date
EMU UAS Host Signature	Date
EHS Director Signature	Date
Chief of Police Signature	Date