University of Michigan Institutional Autonomous Systems Committee Application for Use of UNMANNED AIRCRAFT SYSTEMS (UAS)

The purpose of the U-M Institutional Autonomous Systems Committee (IASC) is to provide a path to approval so members of the University community can safely employ unmanned aircraft systems (UAS) in the course of research and educational activities and other endeavors in support of the U-M mission (henceforth, "UM-sanctioned activities") both on and off U-M properties.

This application must be completed to obtain permission to operate UAS **outdoors from, on, or over the U-M Ann Arbor, Dearborn, or Flint campuses, and other U-M properties** (e.g., Biological Station, Pellston, MI; Stinchfield Woods, Pinckney, MI; Camp Davis, Jackson, WY), for any purpose. The specific process for approval is outlined in the attached matrix.

This application must be completed by U-M faculty, students, and staff to obtain permission to operate UAS off of U-M property for U-M sanctioned activities. For uses off U-M property, the committee will not recommend approval of an application until written permission from the property owner and/or manager is obtained and submitted to the IASC. The IASC does not have authority with respect to off U-M property uses by those unaffiliated with U-M, or by U-M community members for personal uses or other uses unconnected with any U-M activities. If you plan to fly at multiple locations, separate applications for each site are required.

See next page for minimum requirements for approval.

Submit your complete application <u>at least three weeks</u> (21 calendar days) ahead of your planned flight date. Incomplete Applications will be returned, increasing the approval timeline.

WE CANNOT GUARANTEE THAT APPROVAL WILL BE OBTAINED IN LESS THAN THREE WEEKS.

If submitting your completed application less than three weeks ahead of your planned flight date, an explanation as to why the reduced timeline is requested must be provided (see question 13) in order to be considered for approval.

The committee will not review incomplete applications or outdated application forms.

Notice:

Applicants must read and understand the following documents prior to completing this application:

- <u>Regents Ordinance Article XVI</u>
- <u>U-M Policy on the Operation of Unmanned Aircraft Systems</u>
- FAA Small Unmanned Aircraft Rule (14 CFR Part 107)

Minimum requirements for approval of outdoor use

You must:

- Obtain an <u>FAA Part 107</u> Remote Pilot Certification. Prior to submitting IASC application the remote pilot-in-command (rPIC) should have their FAA Part 107 Remote Pilot Certification (issued after passing the FAA Part 107 Knowledge Test).
- Submit a <u>fully completed, current version</u> of the IASC application.
- Undergo a successful validation flight. This is a validation of flight proficiency by a 3rd party, with report sent to the committee. Note: The IASC application should be submitted to the IASC prior to the validation flight occurring. Information on how to arrange for a validation flight can be obtained by emailing iasc.review@umich.edu.

No application needed in these cases:

Indoor use of UAS is allowed on U-M property **without** application to the IASC or waiver of Article XVI:

- a) the use will occur in a University space or building that has established policies and procedures to permit the safe operation of UAS,
- b) the use is conducted in accordance with those policies and procedures, and
- c) the building manager has granted permission for the use.

See the EHS Guideline on Indoor Operation of Unmanned Aircraft Systems.

Additionally, UAS operations can be conducted without an IASC application or a waiver of Regents Ordinance Article XVI within the <u>M-Air netted flight facility</u>. To arrange flight time at M-Air, contact: <u>mair-info@umich.edu</u>

FILMING PERMISSION:

If you are flying a drone to film on campus,

you may also need to apply to the U-M Film Office for permission.

Please complete the form below to apply for use of an unmanned aircraft system (hereafter, "UAS") on or off U-M property. Email completed form to: IASC.Review@umich.edu

	APPLICANT					
1	Full name:					
2	Title and affiliation:					
3	Address:					
4	Phone number (incl. cell):					
5	Email:					
6	For non-UM applicants,	name and department of U	-M contact person/sponsor:			
7	Date of Application:					
	ANTICIPATED DATES OF OPERATION					
8	Is this use intended to	One time				
	be (choose one):					
		Repeated				
9	If repeated indicate how r	nany times, and how freque	ently:			
10	Anticipated date(s) of					
10	operation:					
11	Anticipated start time:					
12	Anticipated end time:					
13	If date of application and date(s) of operation are less than 21 calendar days, explain why this timeline is necessary:					
TYPE OF ACTIVITY						
14	Describe the activity and its purpose including how it relates to research and educational activities or other endeavors in support of the U-M mission (200-300 words):					
15	Is there a funding source	for the activity (e.g.,	Vee			
	sponsored research project). or is there					
	sponsorship or compensa	tion provided of any kind?	No			
		-				

16	lf yes, explain:					
GENERAL LOCATION OF USE (more information will be requested below)						
17	Outdoor from/on/over (choose one):					
	<u>Off</u> U-M p	Off U-M property				
	U-M Ann Arbor campus property					
	U-M Dearborn campus property					
	U-M Flint	U-M Flint campus property				
	Other U-M property, <i>e.g., Biological Station, Stinchfield Woods, Camp Davis.</i> Please specify:					
	A waiver of Regents Ordinance Article XVI is required for all flights over U-M property.					
OWNER OF UNMANNED AIRCRAFT SYSTEM (UAS)						
18	Name of UAS owner, if not the applicant:					
19	Contact information for owner, if different from above:					
20	Is the UAS own	Is the UAS owner a U-M faculty Yes If yes, with which laboratory (by faculty				
	or staff membe	er, or a sti	student? No name) or department, school/college (for UM courses) is the UAS owner associated:			is the UAS owner
21	If no, indicate the provider of the liability insurance that will cover the activities of each of the participants (e.g., PIC, VO):					
DETAILS ABOUT THE UAS						
22	Is the UAS you plan to use	Yes No	If yes, indicate the exact make and model:			
	made/sold?		If no (the UAS was not commercially made/sold), please answer "Custom" and provide an explanation:			

23	Has this commercially	Yes	If yes, please explain:		
	made/sold UAS been	No			
24	What is the FAA registrati	on identifica	ation nu	mber that is on the aircraft?	
25	What is the serial number	What is the serial number of your aircraft?			
26	Is the UAS or any other te	JAS or any other technology used in Yes			
	the proposed operation ex	export-controlled?			
				Unsure	
	If yes, or unsure, please				
	explain:				
Att.	Please attach 2-3 photographs of the UAS.				
27	Provide the weight of the UAS without payload (in grams and in lbs):				
28	Provide the weight of the UAS with payload (in grams and in lbs):				
29	Is the propeller system	Yes If yes, describe and attach photo(s):			
	ducted or otherwise	No			
30	shielded? IV What is the stored energy in the system at the time of lounsh? Drovide dataile a result of lounsh?			e time of launch? Provide details e d	
50	battery capacity or type and amount of fuel carried:			carried:	
	REMOTE PILOT IN COM		JVISU	AL OBSERVERS	
31	Name of Remote Pilot in				
	Command (RPIC):				
Att.	Attach a photo of the RPIC Certification (FAA Part 107).				
32	Describe the extent of the RPIC's experience with the platform to be used, or similar				
	platform, in similar operational scenarios:				
33	Name(s) of Visual Observer(s) $(V \cap s)$:				
34	Describe the extent of the VOs' experience with the platform to be used, or similar				
	platform, in similar operat	ional scenai	rios:		

35	How will the VOs communicate with the RPIC? Note: Relying solely of is not acceptable. The use of two-way radios or similar is recommended detail below:	n unaided voice ed. Explain in			
36	List all other individuals who will be directly involved in this operation, roles/duties, and how they are qualified for this role/duty:	describe their			
LOCATION DETAILS, PERMISSIONS, AND SAFETY CONSIDERATIONS					
NOTE: If the intended use is off U-M property, indicate below if you have obtained permission from the landowner or municipality. Provide name and contact information and attach documentation of the permission granted. The committee will not approve an application for flights <u>off U-M property</u> by U-M faculty, staff, or students in connection with a UM-sanctioned activity until written permission from the property owner and/or manager is obtained and submitted to the IASC. We will also expect you to obtain advance permission for flights near certain U-M campus locations.					
37	Location of intended use (indicate whether on or off U-M property, nar property, and whether indoor or outdoor):	ne of the			
38	Include the latitude and longitude (in decimal format) for the location:				
39	What are the airspace classifications (e.g., B, C, D, E, G) for this location?				
Att.	Append the appropriate sectional map (e.g., see https://skyvector.com) and annotate it with the location of the proposed flight area.				
Att.	Include a screen shot of an aerial view showing the area where the flight will take place and annotate any features (e.g., fences, positions of PIC and VO) that will be employed during the operations.				
40	What is the maximum altitude planned for this flight?				
41	Has an independent validation flight been conducted? (This is a validation of flight proficiency by a designated 3 rd party validator, with report sent to the committee.)	Yes No			
42	\Rightarrow <u>If yes</u> , provide the date it occurred and name of the validator:				
Att.	Attach a copy of the report provided by the validator.				

	⇒ <u>If no</u> , note the IASC application should be submitted to the IASC prior to the validation flight occurring. Please contact the IASC at <u>IASC.Review@umich.edu</u> to inquire about the validation process.			
43	Explain how you will coordinate with local air traffic. Be specific regarding who you will contact and when. Include how you will fulfill the requirement for issuing a distant (D) Notice to Airmen (NOTAM).			
44	Describe how the flight operations area will be configured to ensure safety including how you will secure the area to protect personnel that are present as well as uninvolved bystanders and how you will avoid flying toward or over people.			
	Describe how you will handle the following unplanned events:			
45	Manned aircraft entering flight operations area:			
46	Uninvolved bystanders entering flight operations area:			
47	Drone malfunction, e.g., loss of control, degraded control, etc.:			
48	Environmental conditions, e.g., winds, visibility restrictions, etc.:			
49	Landing areas are required to be at least 5x the diameter of the UAS, but not less than 8x8', flat and clear of obstructions. Provide a description of the landing zone you will use, e.g., sod, parking lot, plywood, etc., and confirm that the zone is not less than 8x8'.			
50	ALL FLIGHTS SHALL be line-of-sight with direct operator override authority for a flight termination (kill) at any time such action is needed for safety and to maintain operations in the approved test range.*			

	*A response of 'No' above is unacceptable for approval, unless applicant has a relevant 14 CFR Section 107.31 waiver. Note that the maximum radius for maintaining visual line-of-sight is not to exceed 0.5 miles, and certain weather conditions may require a smaller radius for visual line-of-sight.					
51	Explain how you will maintain a flight log:					
PRE-FLIGHT NOTIFICATION REQUIREMENTS						
52	Confirm that you will take responsibility for any pre-flight	Yes				
	notification requirements under FAA Part 107 if applicable to	No				
	flight notifications that may be required by the IASC					
	mgnt notifications that may be required by the IASC.					
VHF RADIO FREQUENCY MONITORING						
53	Confirm that during your operation you will monitor the	Yes				
	frequencies appropriate for the location to remain aware of the	No				
	proximity of manned aircraft.					
POST-FLIGHT REPORTING REQUIREMENTS						
54	Confirm that you will take responsibility for the post-flight	Yes				
	reporting requirements under FAA Part 107 if applicable to your	No				
	flight, and that you will take responsibility for all other post-flight					
	reporting that is required by the IASC.					
55	Please include any other information that may assist the committ	ee in its review:				
L						

Signature of Applicant

Date

Printed Name of Applicant

Email completed form to: IASC.Review@umich.edu