



CALIFORNIA STATE UNIVERSITY CHANNEL ISLANDS ADMINISTRATIVE POLICY MANUAL

Academic Affairs

Approved By: Richard R. Rush
President

Policy Number: AA.01.005

Effective Date: 11/4/13

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Policy on Use of Unmanned Aerial Systems

PURPOSE:

To provide guidance concerning the appropriate operation of and uses for unmanned aerial systems related to academic endeavors at California State University Channel Islands (CI).

BACKGROUND:

Unmanned aerial systems offer great potential as tools for research and teaching. The use of UASs can offer students at CI valuable experience in a range of disciplines including Applied Physics, Computer Science, Environmental Science and Resource Management (ESRM), and Mathematics. In addition to experience associated with programming/flying UASs, students can benefit from the design, selection, and operation of sensors and from the post-processing and analysis of sensor data. Use of UASs can provide students and faculty access to relevant data from the region to enhance projects within existing courses (e.g. environmental monitoring, image processing, pattern recognition, electronics), enable undergraduate capstone and Master's thesis projects, and permit research to answer significant academic and practical questions.

POLICY:

Accountability:

Provost / Vice President for Academic Affairs

Applicability:

All faculty, staff and currently enrolled students at CSU Channel Islands

Definition(s):

COA – Certificate of Authorization

FAA – Federal Aviation Administration

UAS – Unmanned Aerial System

sUAS – small Unmanned Aerial System

Text:

This policy applies to fixed wing and rotor vehicles operated without a human pilot onboard, by CSU Channel Islands faculty, staff or students, in the course of scholarly or academic endeavors.

1. Unmanned Systems Board – The Unmanned Systems Board (Board) will be comprised of faculty and administration and operate in a manner similar to the Institutional Research Board



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(IRB). The Board is responsible for review, approval and oversight of UASs operation at CI. The members of the Board will be appointed by the President.

- a. Prior to any acceptance of materials or funding for any aerial operations of sUASs a PI or program must submit a proposal for review and approval by the Board.
 - b. Before the initiation of any flight operations under the auspices of CSUCI, PIs must submit a research and flight plan to the Board. Approval of a sUAS research/flight plan should be the first step in any instructional, research endeavor or other project utilizing sUASs (e.g. before submission to Research and Sponsored Program, Curriculum Committee, IRB, etc.). An approval from the Board will provide a minimum level of assurance that the operators are aware of the additional permitting requirements (i.e., FAA), and are prepared and capable of operating an sUAS safely and responsibly.
 - c. The Board will have responsibility for ensuring that Monthly Flight Logs are maintained. Approved research and teaching flights shall be reported on a monthly basis to the Board. Launch/landing locations, flight times, approximate flight paths, a brief qualitative description of the data collected, and the CI staff, faculty, and administrators involved will be documented.
2. Data Storage and Use - The types of data that CI-owned sUASs collect will be limited. The use of sUASs will be related to environmental concerns, primarily in public lands such areas as the vicinity of CI's Santa Rosa Island Research Station, coastal zone/offshore waters, over federal lands such as the Channel Islands National Park and Mugu Lagoon (naval air space controlled by Naval Base Ventura County). Uses would include wildlife counts, flora and fauna identification, hyperspectral vegetation mapping, tracking mobile telemetry affixed to animals (e.g. foxes, owls), and anonymous vehicle counts/activity on public lands/waters (such as vessel density inside and outside Channel Islands Marine Protected Areas). CI's sUASs will collect data for research and approved projects only. All data collection instruments installed on each sUAS must be justified by project proposals, which clearly state the purpose of data collection. These proposals must be approved by the Board. Any data sharing/distribution is the responsibility of the PI/instructor in charge but should generally be publically available within one year of the data collection flight and/or termination of the data collection project.
- a. When a sUAS is operated in conjunction with a partner agency, the agency will be responsible for proper use of the collected data that follows this policy and local, state and federal regulations. For each project all data collected will be reviewed by an individual designated by the partner agency to eliminate sensitive, compromising or otherwise inappropriate material before data is distributed for analysis, stored on server with broader



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- access or made public in any way. Unless proprietary, sanitized data will be stored reliably and be accessible for research and statistical purposes on web similar to the Monterey Bay seafloor site (see references).
3. Equipment Maintenance and storage – The maintenance, storage and preparation of sUAS units operated by CI will be conducted by an academic program area. Initially this responsibility will rest with the faculty and staff of the Applied Physics program. The PI or designee may review and modify assignment of responsibilities as needed. Any university owned sUASs and related support equipment will be stored in appropriate facilities. Actual flight operations must be approved in advance by the Unmanned Systems Board.
 - a. Within the first three months of the initial acquisition of any sUAS, Physics will be responsible for conducting at least two stake-out flights to determine the recharge schedule for use/maintenance.
 - b. After evaluation, an approved on-campus and non-CI (per day or per flight hour) rate for each sUAS will be submitted to the Board and used to recover costs in class or research-based operations of the sUAS. While a sUAS project at CI must by definition involve a CI PI, operating costs may be charged at the external rate if a project is being conducted primarily for an outside entity (e.g. minimal teaching or PI-based research value) or an external rate if the primary use of the data is for an outside agency. For example, if NOAA is funding a breeding bird survey of Santa Rosa Beaches, it is acceptable to charge NOAA the higher, outside rate.
 - c. Instrumentation and Sensors - As with most such environmental sensing systems, the primary ongoing costs are associated with the environmental sensor packages flown on the sUAS (particularly the routine calibration costs/schedules). Aside from any fixed, onboard systems (temperature loggers, GPS, barometers, navigation cameras), the maintenance of any such sensor packages will reside with the PIs who own/control the sensor and be their responsibility.
 4. Compliance with Applicable Regulations – The Board and sUAS operator are responsible for compliance with all relevant FAA regulations. A COA is required from the FAA for operation of UA in commercial, civilian air space. Operations of sUASs within other airspace may require permission of the relevant agencies or entities and may not necessarily require FAA approval.
 5. Procedures – Prior to commencing flight operations the Board must develop appropriate procedures to ensure the safe and appropriate operation of sUAS units. These procedures will include:
 - o Review of justifications for data collecting (including instrumentation and project goals)



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- Creation and maintenance of logs of all flights and all data files collected
- Securing raw data to authorized persons
- Data storage with various levels of access
- Sanitizing data – responsibility of collecting agency
- Securing data from system failure
- Publishing data for public use
- Responding to requests for data

Once developed, procedures developed by the Board will be forwarded to the Provost for review and approval.

EXHIBIT(S):

sUAS Flight and Training Procedure

References

- Federal Aviation Administration, Unmanned Aircraft Systems FAQ page - http://www.faa.gov/about/initiative/uas/uas_faq/
- Federal Aviation Administration, Unmanned Aircraft Systems fact page - http://www.faa.gov/news/fact_sheets/news_story.cfm?newsId=14153
- Monterey Bay seafloor site - <http://seafloor.csUMB.edu/SFMLwebDATA.htm>
- National Oceanic and Atmospheric Administration, Unmanned Aircraft Program - <http://uas.noaa.gov/>