

Regulations of UAV

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Regulators

- FCC: Federal Communications Commission
- FAA: Federal Aviation Administration



FCC

- The FCC regulates interstate and international communications by radio, television, wire, satellite, and cable.
- Use (non-Federal) of the radio frequency (RF) spectrum and operation of RF transmitters in the US are governed by the Federal Communications Commission (FCC)



FCC and UAS operations

- RF equipment used by UAS operators in the US must be FCC certified/licensed.
 - RC-type transmitters and receivers
 - unidirectional (uplink only) and 2-way (with telemetry)
 - typically in the 2.4 GHz band
 - Video downlink
 - typically in the 5.8 GHz band
- Unlicensed components may be used with amateur (ham) radio license

FAA

- The mission of the FAA is to provide the safest, most efficient aerospace system in the world.
- FAA regulates the operations of UAS.
 - <https://www.faa.gov/uas/>



FAA and UAS operations

- Requires UAS registration
 - Failure to comply can result in civil penalties up to \$27,500 and criminal penalties up to \$250,000 and/or imprisonment up to 3 years
 - 1,792,037 Drones Registered (By Jan 2021)
 - 526,487 Commercial Drones Registered
 - 1,262,057 Recreational Drones Registered
- Commercial use of UAS is regulated by the FAA
 - Must be licensed with a Remote Pilot Airman Certificate (RPC)
 - 209,927 Remote Pilots Certified (By Jan 2021)
- FAA regulations do not apply to indoor operations

FAA Regulations

- CFR, Title 14, Chapter 1
 - part 47: *Aircraft Registration*
 - *part 48: Registration and Marking Requirements for sUAS*
 - part 71: *Airspaces*
 - part 107: *Operation and Certification of sUAS*
- AC 00-6 *Aviation Weather*
- Aeronautical Information Manual (AIM)
- Safety Alerts For Operators (SAFO) 09013, 10017, 15010: Lithium Batteries

FAA Regulations

- Flying a sUAS in the NAS for other than recreational purposes requires FAA registration
 - via <https://faadronezone.faa.gov/>
 - commercial (Part 107) operator or recreational
- Requirements
 - 0.55 - 55 lbs.
 - \$5 for 3-year registration